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Addiction is a brain disease, and it doesn't matter: How the aetiology of neurological
impairment guides Magistrates' perceptions of criminal responsibility

Nicholas Sinclair-House

PhD Psychology

University of Sussex

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NICHOLAS SINCLAIR-HOUSE PhD PSYCHOLOGY

ADDICTION IS A BRAIN DISEASE, AND IT DOESN'T MATTER:
HOW THE AETIOLOGY OF NEUROLOGICAL IMPAIRMENT GUIDES
MAGISTRATES' PERCEPTIONS OF CRIMINAL RESPONSIBILITY

SUMMARY

This thesis investigates the extent to which addiction and its associated neurobiological impairment are considered as factors in Magistrates' criminal sentencing decisions. Over four empirical studies, Magistrates were presented with sentencing scenarios and their decisions analyzed. Study 1 indicated that addiction can be treated as a disease of the mind, but only in the explicit absence of choice in its initiation. Where normative addiction narratives were confounded by removing choice, leniency was extended in common with similar impairment of alternate origin. This choice component was examined in the context of age of first drug use, maintenance of addiction, and the extent to which addiction might undermine perceptions of intoxication being voluntary. Study 2 found that choice was equivalently inculcating whether made as a juvenile or an adult, but leniency was observed where addiction was accompanied by an acquired (fictional) brain disease, suggesting it was not solely drug-use which set it apart. In Study 3, removing choice from addiction promoted leniency, but only where drug-use was ongoing and uninterrupted. Where it was not, removing choice resulted in harsher sentencing. Study 4 examined addiction as it influenced perceptions of choice in intoxication, finding that, in specific circumstances, intoxication could serve to mitigate, whilst addiction was more commonly seen as aggravating, even in the absence of intoxication. Results are discussed in relation to current legal standards which attach criminal responsibility to acts on the basis of volitional control over behaviour and deny excuse to offenders where they are understood to have created the circumstances of their own defence. These findings demonstrate impairment mediating leniency on the basis of its aetiology. Addiction is understood as a brain disease in theory, but is treated so in practice only where conventional aetiological narratives are confounded by varying perceptions of voluntariness in drug-use.

I hereby declare that this thesis has not been and will not be submitted in whole or in part to another University for the award of any other degree.

Signature:

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Abbreviations

ABAM - American Board of Medical Specialities

A-G - Attorney General

CDC - Centers for Disease Control and Prevention

CRF - Corticotrophin Releasing Factor

CSJ - Centre for Social Justice

DPP - Director of Public Prosecutions

EEG - Electroencephalogram

fMRI - Functional Magnetic Resonance Imaging

HMIP - Her Majesty's Inspectorate of Prisons

HPA - Hypothalamic-Pituitary-Adrenal

LPP - Late Positive Potential

NAcc - Nucleus Accumbens

NEW-ADAM - New English and Welsh Arrestee Drug Abuse Monitoring

NIDA - National Institute on Drug Abuse

MA - Magistrates' Association

PFC - Prefrontal cortex

SAMHSA - Substance Abuse and Mental Health Services Administration

UKDPC - UK Drug Policy Commission

List of Figures

Figure 1.1 - Opponent Process model of addiction.	6
Figure 1.2 - Proposed network model of addiction.	11
Figure 2.1 - Group schematic of conditions.	44
Figure 2.2 - Mean percentage reduction of initial sentence at Stage 2 in Woznicki's and Heroin conditions (error bars ± 1 SEM; ** $p < .01$).	50
Figure 2.3 - (A) Relative frequency of sentence reduction at Stage 2 in the Disease and Addiction Aetiologies ($N=101$); (B) Mean percentage change from initial sentence excluding null respondents ($n=36$; error bars ± 1 SEM; ** $p < .01$).	51
Figure 2.4 - Relative frequency of sentence reduction across Stages 3 and 4 in Iatrogenic (no choice) and Autogenic (choice) conditions across both Disease and Addiction Aetiology conditions (* $p < .05$, ** $p < .01$, *** $p < .001$).	52
Figure 2.5 - Calculated Odds Ratios and associated Bayes Factors for sentence reductions by Magistrates at different stages of Anchor-and-Adjust sentencing (* $p < .05$, ** $p < .01$, *** $p < .001$; Open circle = Disease vs. Addiction; Open squares = Iatrogenic/no-choice vs. Autogenic/choice origin of Disease; Closed squares = Iatrogenic/no-choice vs. Autogenic/choice origin of Addiction; Closed circles = Pooled odds ratio Iatrogenic/no-choice vs. Autogenic/choice).	53
Figure 2.6 - Mean percentage sentence reduction over all stages in Iatrogenic (no choice) and Autogenic (choice) conditions across both Disease and Addiction aetiologies (error bars ± 1 SEM; * $p < .05$, ** $p < .01$, *** $p < .001$).	54
Figure 2.7 - Mean final sentence in weeks in Iatrogenic (no choice) and Autogenic (choice) conditions across both Disease and Addiction aetiologies (error bars ± 1 SEM).	54
Figure 3.1 - Staged replacement of addiction cycle components across four Aetiology conditions.	65
Figure 3.2 - Mean percentage sentence reduction by Aetiology and Age ($N=270$; error bars ± 1 SEM).	69
Figure 3.3 - Relative frequency of sentence reduction across Age and Aetiology conditions.	70
Figure 3.4 - Mean reduction in sentence across Aetiology conditions ($N=270$; * $p < .05$, ** $p < .01$, *** $p < .001$).	72
Figure 3.5 - Relative frequency of sentence reduction in Heroin and Woznicki's aetiologies (*** $p < .001$).	74
Figure 3.6 - Mean percentage sentence reduction (reducers only; $n=142$) across Aetiology conditions (* $p < .05$; error bars ± 1 SEM).	76
Figure 3.7 - Mean final sentence by Age and Aetiology (error bars ± 1 SEM).	77

Figure 3.8 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Aetiology conditions (* $p < .05$).	78
Figure 3.9 - Relative frequency of Rehabilitation being cited as a factor in sentencing decisions across four Aetiology conditions.	79
Figure 3.10 - Relative frequency of Punishment being cited as a factor in sentencing decisions across four Aetiology conditions.	80
Figure 4.1 - Chronology of the four Maintenance conditions.	97
Figure 4.2 - Mean percentage sentence change by Choice and Maintenance ($N=275$; error bars ± 1 SEM).	101
Figure 4.3 - Frequency of sentence reduction and increase across Choice and Maintenance conditions.	103
Figure 4.4 - Mean percentage sentence reduction across Maintenance conditions.	104
Figure 4.5 - Mean percentage sentence reduction (reducers only; $n=66$) across Maintenance conditions (* $p < .05$; error bars ± 1 SEM).	105
Figure 4.6 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Choice conditions.	109
Figure 4.7 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Maintenance conditions.	110
Figure 4.8 - Relative frequency of Rehabilitation being cited as a factor in sentencing decisions across Maintenance conditions.	110
Figure 4.9 - Relative frequency of Protection being cited as a factor in sentencing decisions across Maintenance conditions.	111
Figure 5.1 - Mean percentage sentence alteration across Relationship and Intoxication conditions.	133
Figure 5.2 (a) Mean percentage change in sentence by all respondents across Drunk conditions ($n=148$; Error bars ± 1 SEM); (b) Mean percentage change in sentence by just changers across Drunk conditions ($n=43$; Error bars ± 1 SEM).	136
Figure 5.3 - Mean sentence change in days across Drunk conditions.	136
Figure 5.4 (a) Mean percentage change in sentence by all respondents across Sober conditions ($n=137$; Error bars ± 1 SEM); (b) Mean percentage change in sentence by just changers across Sober conditions ($n=19$; Error bars ± 1 SEM).	137
Figure 5.5 - Frequency of sentence reduction and increase across Intoxication and Relationship conditions.	138
Figure 5.6 - Mean estimated likelihood of future offences by condition ($N=290$; error bars ± 1 SEM; ** $p < .01$).	139
Figure 5.7 - Percentage of respondents refusing Community Order across Intoxication and Relationship conditions.	140
Figure 5.8 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Relationship conditions.	141

Figure 5.9 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Intoxication conditions ($p < .05$).	142
Figure 5.10 - Relative frequency of Rehabilitation being cited as a significant consideration in sentencing decisions.	143
Figure 5.11 - Relative frequency of Punishment being cited as a significant consideration in sentencing decisions.	143
Figure A1 - Mean rating of importance of five principles of justice (error bars ± 1 SEM).	166
Figure A2 - Response distribution of rating of importance of five principles of justice.	166
Figure B1 - Statement evaluation.	170
Figure F1 - Example prior probability distribution for Bayes Factor calculation.	177
Figure G1 - Prior probability distribution employed for Bayes Factor calculations at Stages 3 and 4.	179
Figure H1 - Prior probability distribution of difference in mean percentage reduction between Heroin and Woznicki's aetiologies.	180
Figure H2 - Prior probability distribution of difference in mean percentage reduction between Heroin/Woznicki's aetiologies and mixed aetiologies.	181
Figure H3 - Prior probability distribution employed for Bayes Factor calculations relating to odds of sentence alteration.	181
Figure I1 - Prior probability distribution employed for Bayes Factor calculations of likelihood of sentence reduction.	182
Figure I2 - Prior probability distribution employed for Bayes Factor calculations of likelihood of sentence increase.	183
Figure I3 - Prior probability distribution employed for Bayes Factor calculations of willingness to treat.	183
Figure J1 - Prior probability distribution employed for Bayes Factor calculations of likelihood of sentence reduction.	184

List of Tables

Table 2.1 - Aggravating or mitigating circumstances presented across Aetiology and Choice conditions.	47
Table 3.1 - Aggravating or mitigating circumstances presented across Age and Aetiology conditions.	66
Table 3.2 - Mean percentage sentence reduction across Age and Aetiology conditions ($N=270$).	70
Table 3.3 - Odds ratio comparisons of Age across Aetiology conditions.	71
Table 3.4 - Effect of Age of initiation on mean final sentence in weeks by Age and Aetiology.	71
Table 3.5 - Odds ratio matrix of Aetiology conditions (* $p<.05$, ** $p<.01$, *** $p<.001$).	75
Table 3.6 - Frequency with which the five principles were cited as at the forefront of consideration in sentencing decisions ($N=276$).	77
Table 3.7 - Difference in relative importance of the five principles in the present scenario and general sentencing.	81
Table 3.8 - Estimated probability of future reoffending across Age and Aetiology conditions.	81
Table 3.9 - Estimated probability of future reoffending by Age.	82
Table 3.10 - Selected examples of factors offered by Magistrates as considerations in sentencing decisions.	83
Table 3.11 - Frequency with which impairment was described in terms of being a medical condition.	84
Table 3.12 - Frequency with which the vulnerability of the victim was referred to as a factor in sentencing decisions.	84
Table 3.13 - Frequency with which the condition described was characterized as a mental illness.	85
Table 3.14 - Frequency with which addiction/dependency was cited as a factor in sentencing decisions.	86
Table 3.15 - Frequency with which impairment was characterized as brain damage.	86
Table 4.1 - Aggravating or mitigating circumstances presented across Choice conditions.	98
Table 4.2 - Aggravating or mitigating circumstances presented across Maintenance conditions.	98
Table 4.3 - Likelihood of receiving a reduction in sentence.	102
Table 4.4 - Likelihood of receiving an increase in sentence.	102
Table 4.5 - Estimated probability of future reoffending.	105
Table 4.6 - Estimated probability of future reoffending across Choice and Maintenance conditions.	106

Table 4.7 - Frequency of preference for community order or custodial disposal by condition.	107
Table 4.8 - Length of community order by group stage.	108
Table 4.9 - Frequency with which the five principles of criminal justice are cited in sentencing decisions.	108
Table 4.10 - Change in relative importance of principles between general sentencing practice and present scenario.	111
Table 4.11 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement A: Addiction is a disease.	112
Table 4.12 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement B: Drug addiction is evidence of a lack of moral character.	112
Table 4.13 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement C: All addicts must at one time have chosen to start taking drugs.	113
Table 4.14 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement H: People punished for taking drugs are less likely to take them in future.	113
Table 4.15 - Frequency with which addiction is mentioned as a factor in sentencing decisions by Maintenance condition.	115
Table 4.16 - Perceptions of addiction's mitigating or aggravating power amongst respondents mentioning addiction as a factor in their decision-making ($n=53$).	115
Table 4.17 - Factors offered by Magistrates as considerations in sentencing decisions.	117
Table 5.1 - Additional factors presented for consideration in sentencing.	131
Table 5.2 - Odds ratio matrix of sentence reduction across 3 Relationship and 2 Intoxication conditions ($*p<.05$, $**p<.01$, $***p<.001$).	134
Table 5.3 - Percentage of respondents altering their initial sentence on discovery that Peter was drunk at the time of the offence.	134
Table 5.4 - Odds ratio matrix of sentence increase across 3 Relationship and 2 Intoxication conditions ($*p<.05$, $**p<.01$, $***p<.001$).	135
Table 5.5 - Frequency with which the five principles of criminal justice are cited in sentencing decisions.	141
Table 5.6 - Frequency with which a lack of previous convictions is cited as a consideration in sentencing ($n=48$) and associated frequency of sentence reduction.	144
Table 5.7 - Selected factors offered by Magistrates as considerations in sentencing decisions.	146
Table A1 - Label values and corresponding percentage amounts.	165
Table A2 - Frequency and relative ranking of importance in sentencing decisions of the five principles of justice (modal rank for each principle in bold).	168

Table A3 - Standardized scores of relative importance of the five principles of justice.	168
Table B1 - Opinion statements.	169
Table B2 - Comparison of agreement with statements A and B.	171
Table B3 - Comparison of agreement with statements A and H.	173
Table B4 - Comparison of agreement with statements A and C.	173
Table F1 - Classification Scheme for the Bayes Factor (as proposed by Jeffreys (1961) and adapted by Wagenmakers et al. (2011)).	178

Table of Contents

Summary.....	i
Statement.....	ii
Acknowledgements.....	iii
Abbreviations.....	iv
List of Figures.....	v
List of Tables.....	viii

CHAPTER

1 INTRODUCTION - THEORETICAL OVERVIEW.....	1
PREVALENCE.....	3
ADDICTION.....	4
Models.....	4
<i>Historic</i>	4
<i>Opponent process</i>	5
<i>Psychomotor stimulant</i>	8
<i>Incentive salience</i>	9
<i>Frontostriatal dysfunction</i>	10
<i>Rational addiction</i>	11
Disease.....	13
Impulsivity and control.....	14
Implications.....	17
LAW.....	18
Denials of offence.....	19
<i>Automatism</i>	20
<i>Cognitive insanity</i>	23
<i>Intoxication</i>	24
<i>Addiction and denial of offence</i>	24
<i>Doli incapax</i>	26
Defences.....	26
<i>Complete defences</i>	27
<i>Duress</i>	27
<i>Necessity</i>	28
<i>Addiction and complete defence</i>	28
<i>Partial defences</i>	30
<i>Diminished responsibility</i>	31
<i>Loss of control</i>	31
<i>Addiction and partial defence</i>	31
<i>Development</i>	32
SENTENCING.....	35
 2 ADDICTION AND CHOICE: THE ROLE OF PERCEIVED CHOICE IN THE SENTENCING OF ADDICTED OFFENDERS.....	 39
INTRODUCTION.....	40
METHODS.....	43

RESULTS.....	49
DISCUSSION.....	54
3 ADDICTION AND MIXED AETIOLOGY: HOW THE SENTENCING OF ADDICTED OFFENDERS IS AFFECTED BY THE AGE OF FIRST DRUG USE AND DISEASE CO-MORBIDITY	59
INTRODUCTION.....	60
METHODS.....	64
RESULTS.....	68
DISCUSSION.....	86
4 ADDICTION AND DRUG USE: HOW THE SENTENCING OF ADDICTED OFFENDERS IS AFFECTED BY THE PATTERN AND CONSISTENCY OF THEIR DRUG USE.....	90
INTRODUCTION.....	91
METHODS.....	96
RESULTS.....	100
DISCUSSION.....	118
5 ADDICTION AND INTOXICATION: HOW THE SENTENCING OF ADDICTED OFFENDERS IS AFFECTED BY THEIR INTOXICATION AT THE TIME OF THE OFFENCE.....	123
INTRODUCTION.....	124
METHODS.....	129
RESULTS.....	132
DISCUSSION.....	147
GENERAL DISCUSSION.....	151
OVERVIEW.....	151
LIMITATIONS.....	153
EMERGING THEMES.....	154
FUTURE DIRECTIONS.....	161
CONCLUSION.....	166
APPENDICES	
A PRINCIPLES.....	167
B OPINIONS.....	171
C ODDS RATIOS.....	177
D EQUIPROBABILITY RANK CALCULATIONS.....	178
E ETHICS AND SAMPLING.....	179
F BAYES FACTORS.....	180
G BAYES CALCULATIONS FOR CHAPTER 2.....	182
H BAYES CALCULATIONS FOR CHAPTER 3.....	183
I BAYES CALCULATIONS FOR CHAPTER 4.....	185
J BAYES CALCULATIONS FOR CHAPTER 5.....	187
REFERENCES.....	188

It is something to show that the consistency of a system requires a particular result, but it is not all. The life of the law has not been logic: it has been experience. The felt necessities of the time, the prevalent moral and political theories, intuitions of public policy, avowed or unconscious, even the prejudices which judges share with their fellow-men, have had a good deal more to do than the syllogism in determining the rules by which men should be governed.

Oliver Wendell Holmes Jr.
The Common Law (1881)

Until comparatively recently, the nature of the alcohol or drug abuser was commonly considered to reside in their bad character. It was the immoral person who consumed to excess, just as it was the immoral person who committed crimes. The link between drugs and crime was therefore considered to be no mystery; evidence of frequent co-occurrence could be attributed to their shared roots. In the latter part of the 20th century, advances in imaging technology and neuroscientific techniques provided a window into the structure and function of the brain and began to reveal evidence of alterations to both being mediated by drugs of abuse. Such evidence has contributed in large part to the emerging belief that addiction should be characterized as a brain disease. Whilst there is by no means complete agreement on whether addiction merits this label or is best understood in these terms, it is a conception which has governed research budgets, directed treatment approaches and increasingly entered the public understanding.

Yet some have argued that, in giving it this label, we are deriving that addiction begins not with choice but with predisposition, that continued drug-use is a compulsion which exceeds rational control, and that behavioural impairment resulting from chronic

drug-use be considered in common with the manifested symptoms of other medical conditions which impede the full voluntariness of action. Any condition or circumstance which calls into question the volitional nature of acts inherently speaks to the existence and extent of responsibility for those acts and, in the case of drug addicts, those acts are frequently criminal in nature. Ordinarily, a medical condition which brought into doubt the voluntary nature of an individual's behaviour would be of significant relevance in a criminal justice context. Given the prevalence of addicted offenders, the question of whether addiction is or should be considered in common with these is an increasingly pressing one. To what extent does the disease-like conception of addiction, with its implications for the volitional nature of behaviour and the blame which attaches to it, factor into the thinking of those tasked with the practical application of criminal law?

Before we return to this question head-on, we will begin by outlining the scale of the problem we are considering, presenting the variety of ways in which drug use and addiction are inextricably linked to criminal behaviour. We will continue by briefly outlining developments in the field of addiction research which have contributed to our current understanding and the continuing debate over addiction's status as a disease. We will demonstrate that the great majority of these theories share in common an understanding that drugs of abuse alter brain structure and function resulting in impaired behavioural control and that, without exception, all current theories incorporate an understanding of functional impairment in the addict. We will present an overview of the evidence for impulsivity and compulsion in the addict which has led some to question the extent to which they bear full responsibility for their actions.

We will then turn attention to the manner in which the law considers mental faculty and behavioural control in determining the existence and extent of responsibility for criminal acts, developing a picture of the evolved law concerning defendants whose volitional capacity is called into question. We will in turn outline how addicted and intoxicated offenders fit into this picture, highlighting areas of uncertainty. We will demonstrate that the law sets the threshold for the complete denial of responsibility extremely high, such that only a vanishingly-small number of cases of this kind are dealt with at the liability stage of criminal proceedings. We will show that the majority are instead passed to sentencing, where factors mitigating or aggravating culpability for offending are considered, and explore the status of addiction as one such factor.

PREVALENCE

The majority of offences committed by addicts are low-level acquisitive crimes such as mugging and burglary, either with the aim of acquiring money to buy drugs or to supplement an income which is consistently expended on them. Such activity has been estimated by police sources to account for in the region of 50% of all crime (Mills, Skodbo, & Blyth, 2013). In 2004, the UK Government estimated that approximately 280,000 'problem drug users' accounted for more than half of all crime (Home Office, 2004), with a resultant social and economic cost in excess of £20 billion per year (Cabinet Office Strategy Unit, 2003). In the four years to 2008 alone, this estimate rose to 332,000 - around 1 in every 150 of the UK adult population (Home Office, 2008). Bennett (2000) explored the relationship between drug-use and the self-reported frequency of acquisitive crime in the 12 months preceding arrest. Arrestees who were users of a single drug reported an average of 26 offences in the past year, users of two drugs 95 offences, and users of three or more drugs an average of 176.

Once arrested, contact with the criminal justice system shows little tendency towards dissuading addicts from further crime. The UK government's Surveying Prisoner Crime Reduction Survey records that the rate of reconviction within a year of release amongst non-drug-using offenders is in the region of 30%, whereas for poly-drug-users the figure exceeds 70% (Ministry of Justice, 2010). Simply put, two out of every three prison terms handed down to substance-abusing offenders are ineffective in preventing those offenders from going on to commit further crimes on release from custody. At the same time, rates of drug use amongst prisoners are similar to those amongst arrestees (Holloway & Bennett, 2004; Wilson, 2011), indicating an availability of drugs in prisons which at least matches and likely exceeds that on the outside. Of the 70% of offenders arriving in UK prisons with a record of prior drug misuse, more than two-thirds report drug dependency whilst in custody (House of Commons Home Affairs Committee, 2012).

Whilst drug use is clearly a risk factor for imprisonment, there is also evidence to suggest that imprisonment is a risk factor for drug use. Almost one in five (19%) of the prisoners sampled in the Surveying Prisoner Crime Reduction study who had ever used heroin stated that they had first used it in prison (Edgar, Aresti, & Cornish, 2012).

In addition, recent years have seen an increasing number of dependency and addiction issues which begin with the legal and legitimate use of prescription drugs.

Recently released US Government figures indicate a 135% increase in the number of heroin users between 2002 and 2016 (SAMHSA, 2017), attributed in large part to the link between prescription medication and subsequent illegal drug use (CDC, 2015). It has been suggested that 75% of heroin users in the US first began using prescription painkillers (Cicero, Ellis, Surratt, & Kurtz, 2014), of whom as many as 40% will have been legitimately prescribed them by their physician (Lankenau et al., 2012). In a disturbing echo of these trends, the prescription rate in the UK for opioid drugs has roughly doubled over a similar time period. As of 2015, 5% of all patients were receiving such prescriptions regularly (Cartagena Farias et al., 2017).

ADDICTION

Neuroscientific advances in recent decades have promoted a fundamental shift in the scientific consensus on addiction. The following section will outline the prominent theories in the field of addiction research which emerged over that time and resulted in the growing acceptance of an idea that was once a minority opinion: that addiction, rather than being attributable to immoral character, is instead best understood as a chronic brain disease rooted in "the neurobiology of disrupted self-control" (Baler & Volkow, 2006, p. 559).

Models of addiction.

Historic. The seal of the American Psychiatric Association bears the profile of Dr Benjamin Rush, who, in addition to being a signatory to the US Declaration of Independence, is also considered by many to be the father of American psychiatry. In penning his 1785 essay 'An inquiry into the effects of ardent spirits upon the human body and mind', Dr Rush can lay claim to being amongst the earliest advocates of what has come to be termed the disease model of addiction. Going against the established understanding of the time, he argued that habitual use of alcohol was not evidence of weak will or immoral character, but should be understood as a consequence of disease brought about by such use. In doing so, he was one of the earliest proponents of the idea that habitual alcohol consumption was driven more by some quality of the alcohol than by the intemperate nature of the consumer (Lender, 1982). Nevertheless, this remained a minority opinion for more than two centuries.

Journals on the topic of inebriation and addiction medicine started to appear towards the end of the 1800s, just as advances in chemistry began to add to the array of

potent and potentially addictive substances isolated and synthesized (Crocq, 2007). Towards the end of the century, the noted German psychiatrist Emil Kraepelin (1887) conducted experiments to examine the impact of various substances on psychological processes and concluded not only that alcohol was a risk factor for mental illness, but moreover that alcoholism should be understood as an acquired disease associated with damage to the cerebral cortex. However, this gained little traction within the nascent study of the psychological sciences well into the 20th century.

Jumping forward, Dole and Nyswander (1967) termed addiction a 'metabolic disease', underlining the fact that addiction could readily outlive any physical dependence on the drug in question. The suggestion that addiction might be a disorder which could continue after drug-use had stopped allowed for two interesting conceptual possibilities. Either drug-use induced addiction, causing changes to the brain which persisted into abstinence over an unknown timeframe, or drug-use interacted with a pre-existing susceptibility of an unclear nature.

Developments in the field of addiction science over the past half-century have arguably been driven in large part by an inability to account for continued, compulsive drug-use even as self-reported pleasure wanes and expressions of a desire for abstinence multiply. Whilst there is by no means absolute consensus, these developments have converged towards broad agreement that addiction is best characterized as a chronic, relapsing disease of the mind (Leshner, 1997; Robinson & Berridge, 1993; Volkow, Koob, & McLellan, 2016).

Opponent processes. Rooted in basic understanding of homeostatic, negative-feedback mechanisms that regulate vital physiological functions such as hydration and temperature, Solomon and Corbit (1973) derived a model of addiction which operated along similar lines. Theorizing that activation of brain systems resulting in deviation from a regulatory set point (an 'a-process') would automatically trigger the activation of a second, opposing process to ameliorate the effect (a 'b-process'), they proposed that intense hedonic or emotional states resulting from 'a-processes' would automatically trigger opposing 'b-processes' which diminish their intensity, and that the balancing of these two opponent processes determines hedonic or dysphoric experience.

The most crucial difference they propose between the a-process and the b-process is that, unlike the a-process, the b-process is strengthened by repeated drug experience (see Figure 1.1). This has the effect of magnifying the impact of the b-process and not that

of the a-process, with this changing balance accounting for the diminishing euphoric effect of drugs (Solomon, 1977). With ongoing drug-use, the b-process continues to strengthen, beginning earlier and lasting for longer, with the eventual effect that it masks the a-process entirely and presents as tolerance to drug effects (Laulin, Célèrier, Larcher, Le Moal, & Simonnet, 1999). At the same time, withdrawal becomes an increasingly aversive state and is therefore compulsively avoided by maintaining drug use.

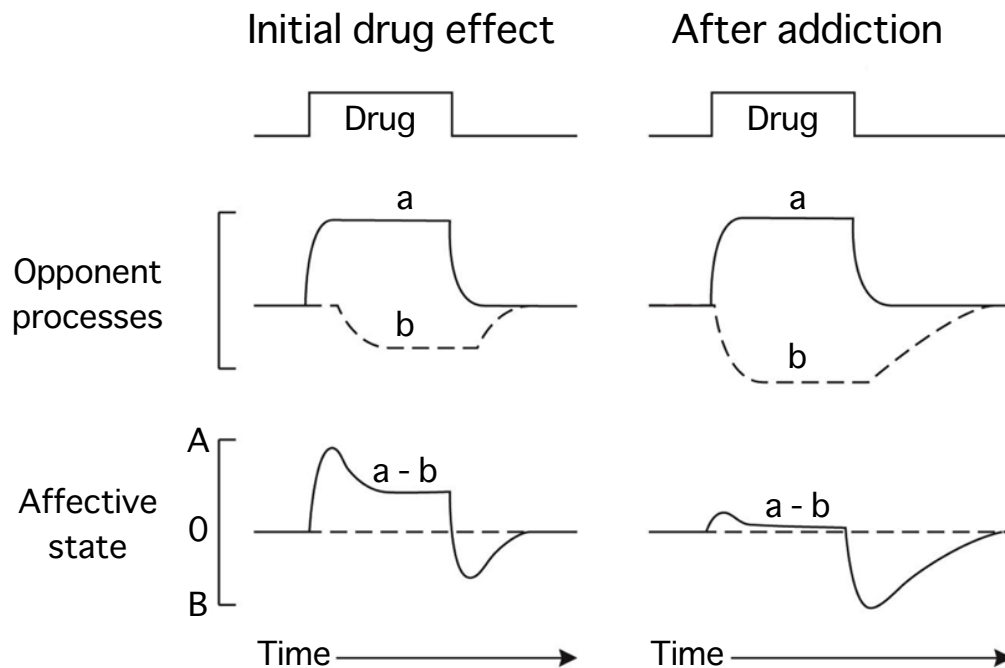


Figure 1.1 - Opponent Process model of addiction.

Koob and Le Moal (1997) extended the theory and proposed a neural model of these opponent processes. They associate the a-process with activation of the mesocorticolimbic dopamine circuit projecting from the ventral tegmental area (VTA) in the midbrain to the nucleus accumbens (NAcc) and the amygdala, whilst positing that the dysphoria of the b-process results from the downregulation of this same circuitry in tandem with stress responses in the amygdala associated with activation of the hypothalamic-pituitary-adrenal (HPA) axis. They suggest that the strengthening of the b-process ultimately leads to the system becoming incapable of regulating around the original set-point. The lowering of this settling-point, theorized to be due to upregulation of corticotrophin releasing factors (CRF) in the amygdala, results in a chronic state of distress and subjective dysphoria.

In line with Solomon and Corbit's (1973) proposal that relapse in abstinence may be the result of conditioned withdrawal effects, Koob and Le Moal (1997) suggest that

upregulation of the brain systems underlying the b-process persists into abstinence. As the b-process is automatically triggered by the a-process, and this in turn may be triggered by both drugs and drug-cues, any hedonic response to such cues is overwhelmed by the lastingly-strengthened b-process, leading to the subjective state of dysphoria associated with withdrawal.

One difficulty presented by this conception is developed from evidence of drug-induced neural sensitization in the mesocorticolimbic dopamine circuit which, under this interpretation, is associated with the hedonic quality of drugs. The result of this amplification of the positive, hedonic a-process should arguably be an initial *increase* in the experience of drug euphoria with repeated use, which seems to run counter to real-world experience. As Robinson and Berridge (2003) point out in reviewing the theory, there seems little evidence from observation or the self-report of addicts that they experience an increase in the subjective hedonic qualities of a drug accompanying repeat administration.

At the same time, there is substantial evidence to suggest that withdrawal is both insufficiently aversive to account for continued drug-use once pleasure in that use has waned, subjectively distinct from the experience of craving reported by addicts, and, when contrasted with that craving, commonly offered as the less powerfully motivating of behaviour (Childress, McLellan, Ehrman, & O'Brien, 1988; Potenza, 2010). There is also little provision in the theory to account for a propensity towards relapse even long after withdrawal. Whilst relapse has been proposed as a conditioned withdrawal response to drugs and drug-cues (Siegel & Allan, 1998) and a putative neural mechanism underlying this has been offered (Koob & Le Moal, 1997), the scope of these explanations is arguably limited by the minimal power spontaneous withdrawal has in the first instance to explain compulsive drug-use (Jaffe, 1992; Shaham, Rajabi, & Stewart, 1996; Wise & Bozarth, 1987). Withdrawal correlates poorly with both subjective drug-craving and propensity towards relapse (McAuliffe, 1982; Tiffany, 1990). Whilst this does not rule it out completely as a motivating factor in drug-taking, it does suggest that it is neither a necessary nor a sufficient determinant of relapse.

One difficulty with attributing drug-use to the avoidance of withdrawal is that physical withdrawal is not a consistent feature across all classes of addictive drugs. Whilst alcohol, opiates and barbiturates can lead to physical withdrawal in abstinence, there is little evidence of the equivalent with drugs of the psychostimulant class

(Robinson & Berridge, 2003). Psychological withdrawal might function in its place, but this suggestion is undermined by the observation that cues paired with stimulants do not trigger withdrawal, instead producing drug-like effects (Childress, Ehrman, McLellan, & O'Brien, 1988; O'Brien, Childress, Ehrman, & Robbins, 1998). It proceeds from this that the avoidance of aversive states is insufficiently explanatory of either continued drug-use or relapse.

Psychomotor stimulant. Wise and Bozarth (1987) argued that the drug class-dependent nature of withdrawal effects conflicted with compulsive use as a shared component of addictions to different drugs. They interpret from this the involvement of two distinct systems, of which withdrawal is the less powerful predictor of both compulsive use and relapse in abstinence. Building on understanding of the mesocorticolimbic dopamine circuit as the brain's reward system, taken together with the discovery that addictive drugs across different classes all have the effect of increasing extracellular dopamine in that same circuit, Wise and Bozarth developed a hedonic model of drug-use in which users take drugs in order to achieve a rise in dopamine levels, leading in turn to the subjective experience of pleasure. Sensitization of this system through repeated drug administration leads to heightened responding when exposed to drugs or drug-cues. Such responding becomes conditioned, potentiating relapse in the absence of withdrawal effects. That craving can remain long after withdrawal effects have dwindled is recognized as implying that the two are mediated by separate neural mechanisms (Robinson & Berridge, 1993).

In focusing on the hedonic quality of drug effects as a primary component of addiction, Wise and Bozarth (1987) offered a positive reinforcement account of addiction in which addicts learned to pursue drugs compulsively in order to re-experience the pleasure they provided. This view was juxtaposed to the negative reinforcement accounts offered by Solomon and Corbit (1973) and Koob and Le Moal (1997), in which the rewarding effect of drugs was derived from their ability to prevent or alleviate adverse states (i.e. through a negative reinforcement mechanism). As such, it presented a model of addiction which did not rely on either physical or psychological withdrawal as an explanatory factor in continued drug-use or relapse. However, the difficulty this model encounters in attempting to present a unifying account of addiction is of a kind with that encountered by negative reinforcement conceptions. In addition to their varied ability to produce withdrawal effects, drugs differ dramatically in the nature

and quality of the subjective pleasure they generate. If an increase in dopamine in the mesocorticolimbic circuit is linked to hedonic response and the shared feature of addictive drugs is an increase of dopamine in exactly that circuit, it would follow that the hedonic qualities of drugs were similar across drug classes. That they are not suggested an incomplete understanding of the link between dopamine and reward.

Incentive Salience. Building on observations of dopamine's seemingly central role in drug abuse and addiction, Berridge, Venier and Robinson (1989) predicted that neurochemical lesions to reduce brain dopamine in rats would have the concomitant effect of reducing hedonic reaction elicited by sweet food. This would have accorded with mesocorticolimbic dopamine's perceived role in mediating pleasure and support Wise and Bozarth's (1987) conception of the hedonic addict. In the event, their expectations were confounded. Although their subjects exhibited a severe absence of motivation, no longer seeking or consuming food (aphagic) or drink (adipsic), taste-reactivity tests indicated that their hedonic response remained, unaltered. From this, they adduced that two separate systems were operating, one associated with hedonic reaction, or 'liking', and the second with the motivational state of 'wanting'. Disruption of dopamine levels in the mesocorticolimbic circuit resulted in a reduction in 'wanting', but 'liking' remained intact.

Taken in tandem with the discovery that dopamine systems in the brain can become enduringly sensitized by drugs of abuse (Robinson & Becker, 1986), this suggested a theoretical approach which could account for drug-craving without appeal to the aversive nature of withdrawal or the hedonic qualities of drugs. Although 'liking' waned with repeated use, drugs of abuse sensitized brain circuits associated with 'wanting', resulting in a heightened degree of motivational attention to drugs and drug-cues, even in the absence of a subjective liking for them. This provided an account of drug-craving as neurologically and phenomenologically distinct from both withdrawal-aversion and pleasure-seeking, rooted instead in the neural sensitization of systems which operate independently of either.

Repeated drug use and the potential for relapse in abstinence are both therefore conceived as examples of conditioned responding, as drugs and drug-cues activate sensitized incentive mechanisms in the brain (McClure, York, & Montague, 2004). This is in keeping with the apparent role of dopaminergic circuitry in the NAcc in the motivating effects of reward-related cues (Balleine & Dickinson, 1998, 2000; Corbit &

Balleine, 2011).

Moreover, it has become apparent that the neural sensitization of these brain systems is gated by context, such that drug-cues are more likely to trigger a 'wanting' for drugs in drug-related contexts (Crombag, Bossert, Koya, & Shaham, 2008; Leyton & Vezina, 2013; Robinson, Browman, Crombag, & Badiani, 1998). Environmentally-cued conditioned responding and the neurological model proposed to underlie it accord to a far greater degree with the observed and self-reported experiences of addicts than either withdrawal avoidance or hedonic models of drug use.

Frontostriatal dysfunction. Crucially, the withholding of conditioned responses to motivational cues relies heavily on 'top-down' cognitive control (Aron, Robbins, & Poldrack, 2004) mediated by prefrontal cortical areas of the brain. The appropriate functioning of these areas is essential for the controlling of strong impulses (Littrell, 2010) and the inhibition of cued responding (Chikazoe et al., 2009).

Whilst exaggerated motivation towards drugs or drug-cues may be attributed to drug-induced alterations to the NAcc resulting from repeated stimulation of the mesocorticolimbic circuit (Lederle et al., 2011), the same circuit also reaches the prefrontal cortex (PFC). The frontostriatal dysfunction model highlights that the types of impairment seen in this area of the brain following repeated drug exposure are associated with failed inhibitory control across a variety of domains (Jentsch & Taylor, 1999), with addicts exhibiting a paucity of cognitive function in common with those who experience lesions or other physical damage to the region (Robinson & Kolb, 2004).

By various means across different drug classes, repeated exposure causes alterations to structure and function in these regions, with the result that the ability to exercise cognitive control over responding is impaired. Chronic cocaine administration is associated with reduced blood flow and metabolism in the PFC (Volkow et al., 1992; Volkow, Mullani, Gould, Adler, & Krajewski, 1992), amphetamines increase the number of synapses (Morshedi, Rademacher, & Meredith, 2009), and the opiate morphine has been estimated to reduce the number of synapses in the region by up to one-third (Kolb, Pellis, & Robinson, 2004). In combination with exaggerated motivational responding in striatal areas, these neural changes result in an amplified drive towards ill-considered behaviour being coupled with the stripping away of high-order executive function which would ordinarily restrain the extent to which impulses were acted upon (Jentsch & Taylor, 1999). Addiction is thereby characterized as a disorder of exaggerated wanting

in the absence of cortical control over behaviour (see Figure 1.2), repeated drug exposure having impaired exactly that part of the brain required to resist enacting a conditioned response to drug cues (Volkow, Fowler, & Wang, 2003).

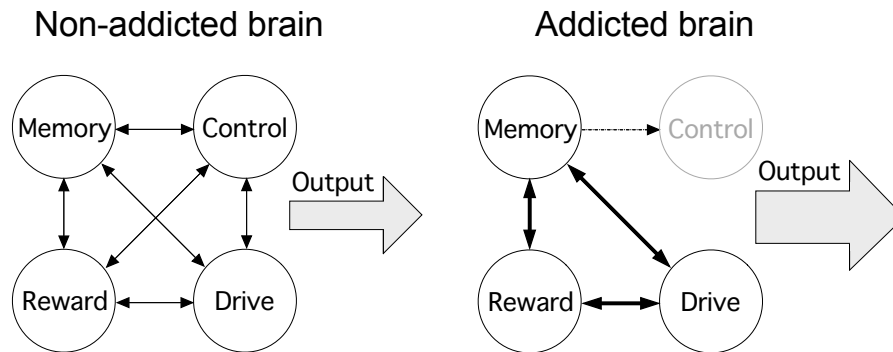


Figure 1.2 - Proposed network model of addiction.

Rational addiction. The models of addiction so far discussed all assume some type of pathology – structural and/or functional changes in the brain that extend beyond the normal, physiological parameters, and as a result produce aberrant changes in function expressed ultimately at the level of decision making. As an alternative to models rooted in neurobiological aberration, there are those who have proposed explanations for addiction which do not require physiology to be outside the bounds of what might be considered ‘ordinary’. Becker and Murphy (1988) likened drug-users to any rational consumers seeking to maximize utility over time and valuing immediate rewards over later ones. They point out that people frequently make these kinds of calculations and rely on the results to guide their behaviour: the value of a night out drinking is balanced against the following day's hangover; the slice of cake is balanced against the later effort of dieting. That such calculations frequently result in the satisfaction of immediate desires at the cost of later discomfort suggests that this is an ordinary facet of human behaviour and requires no explanation rooted in impairment. Conceiving drug-taking as resulting from the rational performance of a delay-discounting calculation, Becker and Murphy argue that "individuals who discount the future heavily are more likely to become addicted" (p. 694).

Elster (2000) argues convincingly that the model of the rational addict is significantly at variance with the beliefs and behaviour of the addict themselves. Growing ambivalence towards the hedonic aspects of a drug and expressions of a desire to reduce or curtail drug-use are common features of addiction, yet neither accords well

with the discounted utility calculation assumed under the model. As a result, the original theory has been extended along several dimensions since its initial derivation, with successive authors proposing additions and modifications which might account for this misalignment. Orphanides and Zervos (1995) introduced a measure of uncertainty into the discounted utility calculation in an effort to draw the model of behaviour further into line with that observed in addicts. They subsequently derived that inconsistencies in this regard might be better explained by individual differences in the performance of delay discounting (Orphanides & Zervos, 1998), the starting point of a rational actor in possession of the appropriate facts having led to the conclusion that some are created more rational than others.

Although some subsequent theorists have varied the precepts of the original model (Dockner, Enelberg, & Feichtinger, 1993; Feichtinger, Hommes & Milik, 1997), all conceptions share in common a definition of addiction in non-physiological terms, conceiving ongoing drug-taking as repeated instances of voluntary action; the drug-user is a rational actor in possession of the relevant facts making a calculated choice. Whilst the facts may be wrong or the calculation incorrect, the rationality of the actor is prerequisite. It is this presumption of rationality which is called into question by the mounting evidence of staged neural plasticity in drug-users, married in turn to behavioural changes which maintain outside an addiction context.

It is only reasonable to note that the three decades which have passed since the rational addiction hypothesis was first proposed have seen the rapid advancement of neuroscientific techniques. Today, the picture we have of the effect of chronic drug administration on the brain is one which includes both neurotoxicity and impaired neurogenesis, modified neuronal spine density, altered metabolism, neural sensitization and long-term potentiation. That repeated drug use alters the structure and function of the brain is a consistent finding across the field of addiction research (Baler & Volkow, 2006; Verdejo-García, Bechara, Recknor, & Pérez-García, 2006; Volkow, Fowler, & Wang, 2003), and is a commonality across most theories of addiction discussed above.

To date, no substantive effort to relate the framework of rational addiction to the reported experiences of actual drug-users has deemed it to hold adequate explanatory power over observed behaviour (Baltagi & Geishecker, 2006; Sloan & Wang, 2008; Hidayat & Thabrany, 2011). That having been said, at the heart of rational addiction models is the supposition that delay discounting in addicts is not the same as that seen in

non-addicts, and in this there is likely some truth. Though at an early stage, there is evidence to suggest that differences in delay discounting may serve not only as a behavioural marker for addiction, but also as a risk factor for becoming addicted (Bickel, Koffarnus, Moody, & Wilson, 2014).

MacKillop et al. (2011) carried out a meta-analysis of 46 studies and found evidence suggesting delayed reward discounting as a common feature of users of drugs of different classes. Subsequent work from the lead author suggests that such impulsive discounting could be considered an endophenotype of addictive behaviour and hence play an aetiological role in substance use (MacKillop, 2013).

Disease. Evidence of drug-induced changes to the brain and endophenotypic risk factors predating drug-use have guided the suggestion that addiction is best conceived as a disease of the mind. Whilst scarcely universal, the extent to which this conception has developed into general understanding is captured by the recent recognition of Addiction Medicine as an official medical sub-specialty by the American Board of Medical Specialities (ABAM). In announcing this development, ABAM President Robert J. Sokol offered that "this landmark event, more than any other, recognizes addiction as a preventable and treatable disease, helping to shed the stigma that has long plagued it" (ABAM, 2016, p. 1).

There are those who argue that the therapeutic practicality of the disease model guiding research and treatment is potentially offset by the degree to which it encourages addicts to understand their circumstances as being outside their control, promoting a fatalistic acceptance of a condition which they cannot change (Hall, Carter, & Forlini, 2015; Lewis, 2015). At the same time there are those who would contend that addiction is not a disease, nor even a disorder of compulsion. Heyman (2013) argues that factors associated with abstaining from drugs are most commonly such things as legal concerns and economic pressures and, given this, concludes that "the correlates of quitting are the correlates of choice not compulsion" (p. 31).

Environmentally-dependent drug preferences also add complexity to the question of whether drug-use is a choice. Environmental enrichment reduces cocaine-seeking behaviour in mice (Chauvet, Lardeux, Goldberg, Jaber, & Solinas, 2009) and can eliminate established addiction-related behaviours (Solinas, Chauvet, Thiriet, El Rawas, & Jaber, 2008). Conversely, and particularly noteworthy given the prevalence of drug-

use in prisons, vulnerability to addiction has been demonstrated to increase on removal from a richly stimulating environment and transfer to a poorly stimulating one (Nader et al., 2012). The difficulty this presents is that evidence of context-dependent preference for drug-use might also be understood as evidence suggesting a measure of conscious control over that use. If a drug-addicted mouse is transferred from a poor to an enriched environment, they curtail their repeated drug-use. One interpretation of this is that the mouse retains control over their choice to consume drugs; that they choose to consume the drugs in a poorly stimulating environment implies that they choose *not* to take drugs in an enriched one.

Impulsivity and control. In their 2003 review paper, Robinson and Berridge offer that "drug-induced impairments in frontocortical function may contribute in important ways to the suboptimal choices and decisions addicts make concerning drug use" (p. 45). Whilst this is a straightforward and likely accurate statement, we might reasonably pause to consider whether choices and decisions which do not concern drug-use are anything other than similarly suboptimal as a result of that impairment. The hijacking of striatal systems may account for the heightened salience of drugs and drug cues, but we must also consider that this is at the expense of natural reinforcers. Structural alteration of the prefrontal cortex may go some way towards explaining the addict's inability to exert control over their response to drug-related motivational cues, but will also translate into impaired behavioural control in other contexts.

When we speak of drug-induced adaptations to brain structure and function it is most commonly in the context of drug-use itself. That is to say, altered motivational perception, attentional bias and impaired behavioural inhibition are proffered as potential explanatory factors underlying aspects of the addictive cycle. Addiction research is, unsurprisingly, concerned in large part with linking these changes to aspects of addiction such as the transition from habitual to compulsive drug-use or vulnerability to relapse even long into abstinence. Contrastingly little attention is given to the impact these alterations have in non-drug-related spheres.

What was clear well in advance of modern brain imaging techniques was that addicts frequently exhibit poor decision-making skills and a tendency towards impulsivity. High measures of impulsivity have been observed in chronic users of alcohol, opiates and psychostimulants such as cocaine (Tziortzis, Mahoney, Kalechstein,

Newton, & La Garza, 2011; Verdejo-García, Lawrence, & Clark, 2008). This has led some to offer that high trait impulsivity is itself a risk factor for drug-use, suggesting it as a "behavioral endophenotype" for dependence (Ersche, Turton, Pradhan, Bullmore, & Robbins, 2010, p. 770). There is an appealing simplicity in the causal logic proposed here. Impulsivity leads to drug use which leads to addiction, and it follows that addicts would therefore exhibit greater than average impulsivity. However, this logic does not maintain under scrutiny. Whilst it is true that high impulsivity appears to increase the likelihood of abusing drugs of some classes, such as alcohol (Lejuez, 2010) and cocaine (Belin, Mar, Dalley, Robbins, & Everitt, 2008), the same is not true in the case of opiates (McNamara, Dalley, Robbins, Everitt, & Belin, 2010; Schippers, Binnekade, Schoffelmeer, Pattij, & De Vries, 2012). Despite the fact that opiate users exhibit high levels of impulsivity (Kirby, Petry & Bickel, 1999), high impulsivity does not appear to predict opiate addiction (McNamara et al., 2010). In this case, it would appear that increased impulsivity stems from substance use, rather than preceding it. However, evidence from animal studies is contradictory on this front, with some finding a link between impulsivity and opiate consumption (García-Lecumberri et al., 2011), and others refuting it (Schippers et al., 2012).

Varieties of impulsivity. Impulsive choice, such as the inability to delay gratification, and impulsive action, such as the inability to withhold responding, are behaviourally and neurologically distinct (Evenden, 1999; Winstanley, Eagle, & Robbins, 2006). However, there is overlap in that they both engage broader inhibitory control systems in the brain, and it is through alteration of these systems that addiction can have some of its most pronounced effects on behaviour. In searching for shared characteristics between addiction to drugs of different classes, impaired inhibitory control presents an appealing framework for understanding behavioural observations. Indeed, one challenge which remains in the study of addiction is to explain the similarity of behavioural impairments seen in users of drugs with such different mechanisms of action.

In behavioural terms, inhibition functions in several different ways and the effects of its impairment are varied. Response inhibition regulates impulsive action in that it mediates the postponement, withholding and cancellation of action (Grant & Chamberlain, 2014). Quite straightforwardly, an inability to exert such control over behaviour results in actions of a rash and ill-considered nature. Additionally, inhibitory circuits play a related but distinguishable role in delayed gratification, acting to prevent

the impulsive selection of a small, immediate reward in preference over a later, larger one (Evenden & Ryan, 1996). Rather than ‘impulsive action’, this is a dissociable aspect of impulsivity more accurately described as ‘impulsive choice’. Crucially, behavioural inhibition is also intimately tied to reversal learning, “the ability to actively suppress reward-related responding and to disengage from ongoing behaviour” (Izquierdo & Jentsch, 2012, p. 607). It has been suggested that deficits in this regard could lie behind the behavioural inflexibility of addicts who continue substance use in apparent disregard of the increasingly negative consequences, and even that it might go some way towards explaining the seemingly compulsive nature of that use (Bari & Robbins, 2013).

Impulsive action. Increases in impulsive action have been observed in acute exposure to cocaine (Paine & Olmstead, 2004) and amphetamine (Blackburn & Hevenor, 1996), but not when exposure is chronic (Paine, Dringenberg, & Olmstead, 2003; Loos et al., 2010). By contrast, opiates such as morphine appear to have little to no effect on a propensity towards impulsive action (Pattij, Schetters, Janssen, Wiskerke, & Schoffeleers, 2009).

Impulsive choice. Increases in impulsive choice, by contrast, have been observed in the case of both acute and chronic exposure to morphine or heroin (Harvey-Lewis, Perdrizet, & Franklin, 2012; Kieres, Hausknecht, Farrar, Acheson, de Wit, & Richards, 2004; Maguire, Li, & France, 2012; Pattij et al., 2009; Schippers et al., 2012). Similar results have been demonstrated for chronic cocaine exposure (Anker, Perry, Gliddon, & Carroll, 2009; Paine et al., 2003), but not in the case of other drugs of the psychostimulant class. Some studies have identified an increase in impulsive choice in the case of acute amphetamine exposure (Cardinal, Robbins, & Everitt, 2000; Evenden & Ryan, 1996), only for subsequent work to contradict these findings and suggest that acute exposure may in fact reduce this aspect of impulsivity in the short term (Baarendse & Vanderschuren, 2012; Bizot, David, & Trovero, 2011). Impulsive choice is also a feature of both acute and chronic alcohol exposure (MacKillop, Amlung, Few, Ray, Sweet, & Munafò, 2011; Olmstead, Hellems, & Paine, 2006), with impulsivity seemingly most pronounced in early-onset alcoholics (Dom, D'haene, Hulstijn, & Sabbe, 2006).

Reversal learning. Impairment in reversal learning tasks has been observed in chronic exposure to alcohol (Badanich, Becker, & Woodward, 2011; Kuzmin, Liljequist, Meis, Chefer, Shippenberg, & Bakalkin, 2012), cocaine (Krueger, Howell, Oo, Olausson, Taylor, & Nairn, 2009) and methamphetamine (Groman et al., 2012), but not in the

case of heroin, where in fact there is some indication that chronic exposure may serve to slightly improve performance (Ranaldi, Egan, Kest, Fein, & Delamater, 2009).

Behavioural inhibition. Clearly not all drugs of abuse have the same effect, but in common across all forms of addiction we see deficits in one or more aspects of behavioural inhibition. If we are to suggest structural brain damage resulting from addiction as the cause of this, we must first identify the brain structure via which inhibition is mediated.

Action inhibition is correlated with activity in the PFC (Brown, Manuck, Flory, & Hariri, 2006). Disrupting activity in the PFC by means of transcranial magnetic stimulation has been shown to lead to riskier decision-making (Chambers et al., 2006) and a reduced ability to withhold prepotent responses (Knoch et al., 2006). Conversely, stimulating activity in the PFC through the application of direct current leads to the suppression of riskier responses (Fecteau et al., 2007). Numerous studies have demonstrated that the PFC is the *sine qua non* of behavioural inhibition, playing an integral role in both impulse control (Littrell, 2010) and the inhibition of prepotent responses (Chikazoe et al., 2009; Dalley, Everitt, & Robbins, 2011).

Implications. The hijacking of motivated attention and the process of neural sensitization latterly associated with conditioned responding are clearly vital pieces of the addiction puzzle and have been the focus of much attention. Yet the common thread running through all current theories of addiction, even some variants of rational addiction, is that repeated drug administration has consequences in terms of the structure and function of the brain, with the result that behavioural output is altered. Whether or not one considers addiction a disease of choice may inform perceptions of its moral quality, but it does not alter the neurological findings. There is an abundance of evidence to show that drugs can cause significant changes in brain areas associated with motivation and self-control - areas understood as integral to volitional behaviour.

The paucity of addicts' ability to inhibit behavioural output is most frequently viewed in terms of their continued substance use despite negative consequences, and their tendency to relapse in abstinence. Yet by no means all the maladaptive behaviour exhibited by the addict is specifically drug-related. The same circuits that are modified by drugs of abuse underpin behavioural output which has nothing to do with drug-seeking or drug-taking. The inability to withhold a prepotent response is of relevance

beyond its interpretation as a driving factor in continued drug use. Adaptive learning is fundamental to human interaction, whereas the propensity to retain and inappropriately repeat an outdated response set even in light of situational change is clearly inimical to it. We can reasonably expect changes to brain circuits responsible for control over responding to have wider consequences for behaviour. As Robinson and Berridge offer in their 2003 review paper, "a loss of inhibitory control over behavior and poor judgment, combined with sensitization of addicts' motivational impulses to obtain and take drugs, makes for a potentially disastrous combination" (p. 46).

Loeben and Stoeckl (2007) argue that moral responsibility is weakened as a result of significant impairment of voluntary control and suggest that our developing understanding of the damage wrought by drugs of abuse on brain systems integral to the regulation of behaviour "reveals a loss of control that undermines normative judgments of blame" (p. 28). Yet such judgments are made of addicts on a regular basis. 69% of arrestees test positive for drugs, and 35% report some measure of dependence (Holloway & Bennett, 2004). Between arrest and prison, there is a determination of culpability. It seems incumbent, therefore, to consider how the law considers criminal responsibility in circumstances where actions have been attributed to aberrant mental processes, and in particular those resulting from diseases of the mind. The following section will discuss the genesis and refinement of the UK law in this regard, and its application in some of the landmark cases which have broadly defined the bounds of liability in such contexts.

LAW

An argument to suggest that a crime did not occur, or occurred without the defendant's involvement, is a denial of offence. No criminal liability can attach because no crime has occurred. Where neither the crime nor the defendant's involvement in it can be denied, they may proffer a defence against the charges laid. Though the crime occurred, there are potentially excusing factors at play which might lessen its perceived severity. In the event that some measure of responsibility remains, partial defences and extraneous factors amongst the wider circumstances of the crime may be reflected in moderated sentencing.

There is little disagreement that repeated drug exposure results in impaired mental function. A 2010 study of polydrug-users found amongst their number a "high

prevalence of executive function impairment” (Fernández-Serrano, Pérez-García, Perales, & Verdejo-García, p. 104). Questions over the extent to which drug addicts might be considered ‘brain damaged’ in this respect give rise to equally legitimate questions over how such damage might impact criminal liability in terms perhaps similar to those outlined above. However, there are significant obstacles to addiction being understood in this way under the law.

Denials of offence. In the majority of common-law criminal justice systems there are two elements which must be present in order to produce criminal liability: *mens rea* and an *actus reus*. The *actus reus* (guilty act) must be accompanied by *mens rea* (guilty mind). These concepts developed in English law from the principle outlined by jurist and Chief Justice Edward Coke in 1644: *actus non facit reum nisi mens sit rea* (an act does not make a person guilty unless the mind is also guilty). This encapsulates a general test of guilt, in that an act committed without fault or blameworthiness cannot be considered a crime.

Involuntary behaviour does not attract criminal liability, and this accords with common sensibilities regarding the degree to which individuals are responsible for their actions in general terms. We do not need a moral philosopher to develop for us the notion that proscribed conduct is meaningless in the absence of free agency. In preferring charges against an individual suspected of criminal misconduct, the law ascribes them wilful authorship of the act. To bring this into question is to challenge the existence of criminal liability entirely. An individual not possessed of mental faculty, or who finds such faculty indisposed for a period of time, with the result that their behaviour may be understood as not of their own choosing, presents to the Court as having committed no crime (*Bratty v. A-G for NI*, 1963). Clearly, the law must provide for claims of this kind.

Alongside claims of involuntariness, a person may also deny an offence on the basis of a simple lack of *mens rea*. For example, where a person damages another’s property under the mistaken belief that it is their own, their lack of knowledge as to ownership undermines potential liability for criminal damage, as they lack *mens rea* for one part of the offence. Cases involving involuntary conduct will standardly include a lack of associated *mens rea*, but a denial of offending on the basis of a lack of *mens rea* need not include a claim of involuntary conduct.

Arguments of this kind are not defences against allegations of criminal acts, but

rather challenge the existence of criminal liability altogether, and are therefore more accurately considered denials of offence. In theory then, considerations of this kind should be addressed before a case reaches trial. However, the caselaw which guides precedent has developed in the main from occasions on which it is brought into question. In other words, determining the boundaries of these arguments under the law has been a process of considering those instances when the argument has been advanced at the trial stage. Perhaps in light of this, when speaking of denials of offence it is not uncommon for them to be referred to as 'defences' by those who practice criminal law (Law Commission, 2012). They do not, strictly speaking, fall into this category, but that is the language commonly employed.

Automatism. In denying conscious control of behaviour, an individual makes a claim of 'automatism'. This is the term the law applies to the absence of voluntary control over the body's actions, such that one's behaviour might be interpreted as that of an automaton lacking consciousness. Lack of consciousness rules out possession of a guilty mind and, in the absence of that mental element, an act cannot be considered criminal. All claims that acts took place outside the voluntary control of the conscious mind are appeals to automatism. It is therefore a broad church which incorporates not only those persons who might be colloquially termed 'mad', but examples as disparate as the person who attacks their wife while sleepwalking (*R. v. Burgess*, 1991), the epileptic who injures a bystander whilst in the throes of a seizure (*R. v. Sullivan*, 1984) or the truck driver whose sneezing fit results in a multi-car pile-up (*R. v. Whoolley*, 1997). All may lay claim to automatism in denying criminal liability for the consequences of their actions.

Insane and non-insane automatism. Within the category of automatism, there are two sub-divisions with respect to the nature of causal factors. Where automatism occurs, actions taken in that state do not attract criminal liability, but this does not alter the fact that acts have been committed which would under any other circumstances be considered crimes. In the absence of external causal factors, such a state can only have arisen as a consequence of internal factors, and this creates a difficulty. Although the individual in this case cannot be found criminally liable, because no criminal offence has actually taken place, they are unlikely to be allowed to resume their former position in society given their demonstrated propensity for involuntary 'criminal' behaviour. By contrast, if automatism can be attributed to an external causal factor (e.g. a blow to the head, or the involuntary ingestion of a mind-altering substance), then it may be taken

that recurrence is unlikely so long as that factor is avoided in future.

For this reason, the law distinguishes between insane automatism and non-insane automatism. Insane automatism¹ is the determination which arises in the event that causal factors are considered to be exclusively internal. Non-insane automatism, more commonly (and confusingly) referred to as simply 'automatism', is the finding which results when external factors are established to which the mental state which arose can be attributed.

It is the individual whose causal factors are internal, and from which they therefore cannot be separated, from whom it is incumbent upon the Court to protect society. For this reason, a finding of insane automatism results in a special verdict allowing for several disposal options, including compulsory detention or supervision (Criminal Procedure Act 1991, s5). Their counterpart whose causal factors are deemed external, and who is thereby determined to have been acting in a state of non-insane automatism, will in consequence be acquitted of all charges. The only exception to this is cases where the external factor arose as a result of the person's own fault, for example, where they negligently failed to eat after taking insulin (cf. *R v. Bailey*, 1983).

There is no statute in UK law which seeks to define automatism. Rather, such definition has emerged through judgments in common law which have served to establish precedents. The legal standard for both automatic behaviour and insanity has been largely unchanged since its fundamentals were established in 1834 when Daniel M'Naghten, supposedly acting under the influence of paranoid delusions, shot and killed Edward Drummond, personal secretary to the British Prime Minister. The subsequent trial hinged on the legal definition of insanity, and the jury's verdict of 'not guilty on the ground of insanity' only served to highlight the lack of a consistent standard to which claims of this nature could be held. In the wake of the verdict, the House of Lords empanelled a group of leading Judges and put to them a series of hypothetical questions regarding insanity and criminal liability. The answers stimulated by those questions formed the basis of the M'Naghten rules, a set of principles by which it might be determined if criminal liability rested with a mentally-afflicted offender (West & Walk, 1977). Through subsequent usage in the common law, these principles became the standard test which a claim of insanity must pass:

¹ Insane automatism should not be confused with Cognitive Insanity (see page 23), despite the fact that they are both frequently abbreviated to 'insanity' in general discussion.

...to establish a defence on the ground of insanity, it must be clearly proved that, at the time of the committing of the act, the party accused was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing; or, if he did know it, that he did not know he was doing what was wrong.

Lord Tindal CJ in *M'Naghten*
(1843)

Clearly this test addresses some forms of involuntary behaviour and not others. Specifically, one might anticipate an instance in which actions are performed in the absence of voluntary control where no such 'disease of the mind' is in evidence.

Criteria. Crucially, non-insane automatism is only available as a denial of offending if three conditions are satisfied. Firstly, the action taken must be deemed to have been completely involuntary. Any measure of control retained over action undermines the notion that the act was truly involuntary, as in *Broome v. Perkins* (1987), where an appeal against a conviction of driving without due care and attention was denied despite the erratic nature of the driving having arisen at least in part through the defendant suffering a bout of hypoglycaemia resulting from his diabetes. The actions he had taken in avoiding collision with other road users and in slowing the car using the brake were both considered to suggest that the appellant had retained some measure of voluntary control, and hence the actions amounting to the offence for which he had been convicted could not be held to be entirely involuntary.

The necessity of complete involuntariness is rendered explicit in Lord Taylor CJ's statement in *A-G Ref* (No 2 of 1992) that "the defence of automatism requires that there was a total destruction of voluntary control on the defendant's part. Impaired, reduced or partial control is not enough" (at 994). In making this judgment Lord Taylor CJ drew upon earlier decisions in *Watmore v. Jenkins* (1962), where the Court referred to the necessity of demonstrating "such a complete destruction of voluntary control as could constitute in law automatism" (at 874), and *Roberts v. Ramsbottom* (1980), where the Court offered that "one cannot accept as exculpation anything less than the total loss of consciousness" (at 832). The very narrow definition of automatism is made clear in *R v. Coley* (2013), in which the Court of Appeal addressed the defendant's claim to have been suffering a psychotic episode at the time of the offence by concluding that it was "a

description of irrational behaviour, with a deluded or disordered mind, but it is not a description of wholly involuntary action” (at 23).

The second criterion which must be satisfied for a finding of non-insane automatism is that the involuntary action must arise as a result of either external factors or reflex. In *R v. Kemp* (1957) the defendant sought to raise a defence of automatism against a charge of grievous bodily harm, arguing that he suffered a disease which caused hardening of the arteries which in turn led to the congestion of blood in the brain. His actions had taken place during the period of lost consciousness which had resulted from this affliction. However, it was held by the Court that a hardening of the arteries with direct and obvious impact on the brain constituted a ‘disease of the mind’ and, under the M’Naghten Rules, would fall outside the scope of a defence of non-insane automatism. That being the case, the only defence open to him was one of insanity.

The third and final criterion which must be met for a defence of non-insane automatism is that the automatism may not be self-induced. The most frequently cited case in this respect is *R v. Bailey* (1983), in which a diabetic defendant was deemed by the Court to have induced his own hypoglycaemic state through failure to eat, and hence could not rely on a defence of non-insane automatism. The conviction was upheld on appeal, but in making its judgment the Court of Appeal clarified the extent to which such a defence was reasonable in the eyes of the law. Griffith LJ offered that “self-induced automatism, other than that due to intoxication from alcohol or drugs, may provide a defence to crimes of basic intent” (at 507), adding moreover that, additionally in crimes of specific intent², self-induced automatism might be relied upon as evidence of the absence of *mens rea*.

Cognitive insanity. Establishing insane automatism relies on the existence of a defect of reason, however transient, so as to constitute a disease of the mind. Not all diseases of the mind, however, impact reasoning or behaviour to the extent that they result in “complete destruction of voluntary control” (*Roberts v. Ramsbottom*, 1980, at 574), such that they would satisfy the criteria for automatism. In circumstances where an

² The distinction made in many jurisdictions between crimes of specific and basic (or general) intent is beyond the scope of this discussion. The US Model Penal Code (American Law Institute, 1985) describes it as “an abiding source of confusion and ambiguity in the penal law” (§ 2.02 cmt. at 231 n.3) and its continued application in English law is perhaps best summed up by Lord Salmon in *DPP v. Majewski* (1977): “The answer is that in strict logic this view cannot be justified. But this is the view that has been adopted by the common law of England, which is founded on common sense and experience rather than strict logic.” (at 482E). For the interested reader, Johnson (2016) provides a somewhat more involved account, with an equivalent conclusion.

individual's actions can be deemed to have exhibited even some small measure of volition, the test is failed. Yet the M'Naghten rules provide scope for insanity which does not manifest in automatic behaviour. An act may be consciously and intentionally performed and yet not attract criminal liability. It is sufficient that the individual who performed the act 'was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing'. In such example the behaviour in question would not constitute automatism, but may nevertheless fall within the definition of insanity laid out within the M'Naghten rules and result in a finding of Cognitive Insanity.

Rather than volition, it is rationality which must be absent. Here, too, the law sets a very high threshold for challenging liability. It is not sufficient to suggest that rationality was impaired. The complete absence of rationality is required, such that the defendant was incapable of understanding their actions or that they were legally wrong.

Intoxication. One of the most common external causes for a lack of *mens rea* is self-induced intoxication, which in extreme cases may be of such degree that voluntariness in action is entirely lacking. Indeed, intoxicated offending is so common that the law has developed particular rules to set it apart from insanity and automatism. These rules permit the creation of liability where otherwise a lack of *mens rea* would speak against it, and at their heart is the logic of 'prior fault'. Only occasionally relevant to automatism cases, prior fault takes a central role in the case of intoxicated offending. Where an offender lacks *mens rea* and/or voluntariness in offending, liability cannot ordinarily be attached to actions. In the case of the intoxicated offender, their earlier decision to become intoxicated is effectively substituted for any missing offence elements, resulting in liability for all but the most serious criminal offences.

Addiction and denial of offence. In *R v. Roach* (2001) it was held that the interaction of external factors with a pre-existing internal condition may provide grounds for a defence of automatism. This thinking is reflected in *R v. Burns* (1973), where the pre-existing internal condition was brain damage due to alcohol abuse and the external factors were alcohol and prescription medication. This provides an insight into the somewhat counterintuitive nature of parsing internal and external cause. Theoretically, an individual, suffering from brain damage resulting from alcoholism, who had taken prescription medications prior to the offence, may raise a defence of automatism, providing that the aberrant behaviour which arose could not reasonably

have been foreseen (cf. *R v. Coley*, 2013). In contrast, a defendant who attributes their behaviour to brain damage induced by alcoholism but who remained sober at the time of the offence may not, in the absence of an external causal factor, and would have only the defence of insanity open to them. Moreover, if the internal factor was identical but the external factor was alcohol, rather than prescription medication, then neither defence could be raised. Automatism would be ruled out because the state of drunkenness would have been foreseeable, whereas insanity could not be invoked because, as the House of Lords clarified in *A-G for N. Ireland v. Gallagher* (1963), if the internal disease of the mind did not bring an individual within the M’Naghten rules, this fact could not be altered by the external factor of exacerbating alcohol.

Insane automatism, by definition, may not be induced by an external factor of any kind. We might argue that long-term neurological effects of repeated exposure to intoxicants represented a ‘disease of the mind’, but even leaving aside the arguments against addiction being so classified, we have seen that the test for the denial of *mens rea* is set strictly at the *complete* loss of self-control. Cognitive insanity, similarly, may not be self-induced and must pass a similarly stringent test: the *complete* absence of rationality.

Non-insane automatism may include a drug component as the external agentic factor, but even if the resulting state of consciousness passed the stringent test of *complete* loss of control over behaviour, the caveat that such state may not be self-induced places a requirement on the individual to advance that such consequence could not reasonably have been foreseen. The naive admixture of alcohol and prescription medications may pass this test (*R v. Burns*, 1973), but can the addicted drug-user reasonably argue their ignorance of the potential such use has for negative consequences?

The conclusion here is that, even were addiction to result in such complete loss of rationality or control over behaviour so as to constitute the basis of a denial of offence, rooted in the absence of *mens rea*, culpability can be restored in the event that the individual concerned is deemed to bear some measure of responsibility for having placed themselves in that state. Denial of offence in the case of addiction is thereby twice-hampered. Even were one to meet the challenging threshold for the denial of *mens rea*, criminal liability can still be attached to actions on the basis of prior fault in having voluntarily consumed the drug at an earlier point in time.

In searching for addiction's place in the law, we can rule out its operation as a denial of offence. The requirement that volition or rationality be completely absent places too

stringent a test for addiction as we currently understand it to pass. If faculty is impaired, rather than destroyed, criminal liability cannot be denied outright on one of the severely limited number of grounds for doing so. We might instead look to analogy with defences, which do not seek to deny liability, but to justify or excuse offending.

Doli incapax. Virtually every legal system in the world determines an age under which children cannot be considered blameworthy for acts which would otherwise be criminal. In England, Wales and Northern Ireland that age is 10.

Being a binary construct, the existence of criminal liability does not readily lend itself to attenuation. Given the *a priori* position that infants lack sufficient mental faculty to form criminal intent, we are forced to ponder the appropriate stage during their maturation into adulthood at which such faculty might be deemed sufficient. In this we can see rendered a well-recognized fallacy: that there is an identifiable threshold which, when crossed, somehow ‘activates’ criminal responsibility. A child of 9 is no more completely irrational than a child of 11 may be described as completely rational, yet the determining of criminal liability in such fashion is necessitated by the logical impossibility of having partial *mens rea*.

At the same time, neither rationality nor conscious control over action are binary constructs in this same vein. On the spectrum between complete rationality and complete irrationality, there are a multitude of dispositions in between, and the same may equally be said of control. Does it follow from this that partial rationality should result in only partial liability? Plainly, it cannot. Liability either exists or it does not. Yet there are conditions which impair, rather than obliterate, either rationality or control over action. In such circumstances, where *mens rea* cannot be denied, the law must yet account for gradations of this kind.

Defences. Where liability cannot be denied, there is still scope for offending to be excused. On a limited number of grounds, a defendant may offer that they are less than fully culpable for their actions. As with the grounds on which denials of offence are based, defences are largely concerned with the degree to which offenders may argue that their actions were not fully within their control. An individual may retain control over their movements and full understanding of the wrongness of their actions, but, where pressured to act through threat or circumstance, may argue for reduced or absent blame in respect of those actions.

Where such an excuse serves to exculpate entirely, it is referred to as a ‘complete’ defence. A successful argument in these terms would result in acquittal. ‘Partial’ defences, on the other hand, reduce culpability rather than removing it, with the result that the impact of such findings is reflected in sentencing. As we shall see, in common with denials of offence, these liability stage rules are rarely open to addicted offenders.

Complete defences.

Duress. In order to be judged wholly responsible for one’s actions they must be actions taken of free will. To attribute responsibility is to attribute authorship. Hence the individual who commits a crime under duress placed upon them by a third party through threat of violence may argue that the crime was not one for which they bear culpability. Whilst such circumstances would not justify, they might instead excuse criminal acts.

The circumstances governing when and to what extent an individual may claim to have been acting under such duress are generally taken to have been established in their modern form by Sir James Fitzjames Stephen, whose Digest of the Criminal Law of England (1887) outlined the doctrine in these terms:

An act which would otherwise be a crime may in some cases be excused if the person accused can show that it was done only in order to avoid consequences which could not otherwise be avoided, and which, if they had followed, would have inflicted upon him or upon others whom he was bound to protect inevitable and irreparable evil, that no more was done than was reasonably necessary for that purpose, and that the evil inflicted by it was not disproportionate to the evil avoided (pp. 24-5).

For over a century, these broad terms have been regarded as providing the clearest direction for probing a defence of duress. It has guided decisions in defining cases such as *R v. Martin* (1989), in which Simon Brown J acknowledged the existence, in extreme circumstances, of a defence of necessity which he termed “duress of circumstances” (at 653), and *R v. Abdul-Hussein* (1999), wherein the Court of Appeal established that the threat of death or serious injury had only to be ‘imminent’ and not ‘immediate’. These principles, as restated by Simon Brown J in *R v. Martin* (1989), were described by Rose VP in *R v. Abdul-Hussein* (1999) as “the clearest and most authoritative guide to the relevant principles and appropriate discretion in relation to both forms of duress” (p.

12).

Duress requires that the threat made “must be so great as to overbear the ordinary powers of human resistance” (*A-G v. Whelan*, 1933, at 526). To be included within this category requires passing the Graham test, so named for the case in which the three criteria were clearly laid out (*R v. Graham*, 1982). Firstly, the defendant must have a reasonable belief that the threat is real. Secondly, that belief must have led to their having good cause to fear death or serious injury in the event of their failure to comply. Thirdly, it must be conceivable that, if they shared the characteristics of the defendant, a sober person of reasonable firmness would have acted similarly.

Necessity. Unlike duress, the defence of necessity is not defined in law. Rather, its existence represents an acknowledgement that neither statute nor precedent can anticipate all possible circumstances. The defence of necessity has broadly been interpreted as applying where a crime has been committed in attempt to prevent a greater wrong. Given the potentially broad scope of such a defence, courts have demonstrated reluctance to entertain it outside the most extreme cases, and even greater reluctance to define it in real terms. Child and Ormerod (2017) suggest that it is “best understood as an imperfect safety net, a complete and general defence of last resort where no other defence is available but it is clear that liability would be inappropriate” (p. 591).

The greatest clarity on the necessity defence is arguably that provided in *Re A* (2000), where Brooke LJ laid out the necessary requirements: (i) the act in question was needed to avoid inevitable and irreparable evil; (ii) no more should have been done than was reasonably necessary for the purpose to have been achieved; (iii) the evil inflicted must not have been disproportionate to the evil avoided. However, it was made clear in this judgment that these requirements did not in themselves form the basis of a necessity defence. They were, rather, points of reference for guiding consideration of the particular facts of a given case. A necessity defence is only likely to succeed where it is believed that a particular, unique set of circumstances exist which are not catered for in the existing law.

Addiction and complete defence. There may at first appear to be scope here for addiction to inform judgment along lines akin to those which excuse offending. We could propose withdrawal as a form of duress, for instance, or argue that craving is a type of necessity. However, we quickly run into some familiar issues with respect to

volition and foresight.

Where defendants seek to raise a defence of duress, such state of duress as is claimed cannot have been entered into by choice. As Lowry LCJ made clear in *R v. Fitzpatrick* (1977), “if a person voluntarily exposes and submits himself...to illegal compulsion, he cannot rely on the duress to which he has voluntarily exposed himself as an excuse” (p. 33). This logic was clarified in *R v. Shepherd* (1987): “it is a matter of joining in a criminal enterprise of such a nature that the defendant appreciated the nature of the enterprise itself... so that when he was in fact subjected to compulsion he could fairly be said by a jury to have voluntarily exposed himself and submitted himself to such compulsion” (p. 51). Here we can see the logic of prior fault directing the course of assigning responsibility for criminal action. Reasonable foresight and voluntary behaviour inculcate where otherwise there would be questions over liability.

If anything, a defence of necessity provides even less scope for excusing the behaviour of addicted offenders. Where it has been successful, this has been in cases involving a unique set of circumstances not catered for in statute or precedent. There is a substantial amount of caselaw concerning addicted offenders, in part because their crimes are anything but unique.

One central difficulty is that a state of addiction is not the same as a state of intoxication. One can be a sober addict. So we instantly have two categories: the sober addict and the intoxicated addict. The intoxicated addict might suggest that the state of intoxication in which they committed offences was such that their rationality was impaired. The complete loss of rationality would by definition negate *mens rea*. Where such a state was voluntarily entered into, *mens rea* can be constructed through the doctrine of prior fault. This only requires that the intoxicating substance in question was first taken voluntarily, and with reasonable anticipation of its potential for inducing deleterious behavioural results. An addict is a more than infrequent user, so cannot reasonably argue that the potential for such results was unforeseen.

On the matter of voluntariness, there is a *prima facie* argument that, as an addict, drug use is not voluntary. Indeed, compulsive drug-taking is a pillar of drug addiction. Yet, even if we were to accept the addicted state as confirmation that any individual episode of intoxication was not, in the strictest sense, voluntary, the logic of prior fault extends over time. There is certainly a stage on the path toward addiction at which frequent use transmutes into compulsive use, which logically develops the notion of a

period of drug-taking which preceded compulsion. Such voluntariness as might be deemed absent from the intoxicated state in which a crime was committed can be found in the acquisition of the addicted state on which blame for the intoxication is placed.

On the other hand, what of the sober addict? That is, the individual who has, through drug exposure, induced brain changes which result in altered behavioural output, yet was not intoxicated at the time of the offence. If there is a credible argument to be made that the criminal behaviour in question was stimulated, guided or permitted as a direct result of the long-term effects of addiction, this presents a quandary. To what extent is behaviour under those terms volitional? Ordinarily, brain dysfunction of similar quality would be highly relevant in apportioning criminal responsibility. Yet the addict can ascribe such aberrant mental processes only to their compulsive drug-taking behaviour, blame for which can be placed on their earlier, voluntary drug-taking. In this way, the same logic which underpins prior fault thinking can be stretched across years, and even decades.

Clearly voluntariness is not a binary construct. It exists on a spectrum. At one extreme is genuinely volitional action and, at the other, the complete absence of voluntariness: action without choice, action without awareness. Where these circumstances are demonstrated to exist, criminal liability cannot be attached to behaviour. Where some fractional measure of control over and understanding of behaviour is present, the question becomes one not of the existence of liability, but over the extent of responsibility borne. Compulsion or constraint of behaviour may result in the rational commission of knowingly criminal acts whose performance nevertheless cannot be considered entirely voluntary. Certainly there is a distinction when contrasted with an individual who commits identical acts in the absence of such influence. The extent to which behaviour is voluntary has direct relevance to its perceived criminality.

Partial defences. Partial defences are only available to a charge of murder, but are included here as illustrative examples of the way in which the law regards claims that aberrant mental function should translate into reduced culpability for offending. Murder is the only crime for which the law obliges a mandatory life sentence, which has the effect of limiting judicial discretion with respect to the sentencing options available. Partial defences therefore exist to allow a charge of murder to be reduced to one of voluntary manslaughter, removing the obligation of handing down a life sentence and opening up sentencing options which would not otherwise be available. The successful

advancement of a partial defence does not challenge the existence of criminal liability, but rather permits sentencing to be moderated in respect of mental factors which may speak to reduced culpability for the offending.

Diminished responsibility. In order to present a defence of diminished responsibility, it must be established that the defendant was “suffering from an abnormality of mental functioning” arising from a recognised medical condition which was causal to the crime (Homicide Act 1957, s2). This abnormality must substantially impair either the defendant’s ability to understand the nature of their conduct, their ability to form a rational judgment, or their ability to exercise self-control.

Loss of control. The Coroners and Justice Act 2009 abolished the somewhat incoherent common-law defence of ‘provocation’ as a partial defence to a charge of murder and replaced it with ‘loss of control’. The three criteria which need to be satisfied in order for a defendant to raise this defence are that the loss of control was causal to the offence in question, that it had a qualifying trigger, and that “a person of [their] sex and age, with a normal degree of tolerance and self-restraint and in the [same] circumstances...might have reacted in the same or in a similar way” (s 54(1)).

Addiction and partial defence. Given our understanding of addiction as a condition rooted in compulsion and disrupted self-control, it may at first appear that a ‘loss of control’ defence is a natural fit. However, a loss of control argument is difficult to form in the case of addiction, as one prerequisite is “a normal degree of...self-restraint” (Coroners and Justice Act 2009, s 54(1)(c)). Suggestion that the loss of control in question was rooted in neurobiological disruption which undermined normal restraint clearly fails this test.

It is, rather, in the realm of diminished responsibility that some account has been taken of addiction in determining culpability for offending. Whilst attempts to propose acute intoxication as a “recognised medical condition” (Homicide Act 1957, s (2)(a)) have failed (*R v. Dowds*, 2012), there have been instances in which account has been taken of addiction in tandem with intoxication. As we have seen, intoxication cannot be offered as a complete denial of criminal offending where it is understood to have been voluntary. However, an addict might advance that their intoxication is not voluntary, but rather a compelled act over which they are incapable of exerting control. In *R v. Tandy* (1989), Watkins LJ outlined the operation of such an argument in terms of rationality and voluntariness:

If the alcoholism has reached the level at which her brain had been injured by the repeated insult from intoxicants so that there was gross impairment of her judgment and emotional responses, then the defence of diminished responsibility was available to her ... if her drinking was involuntary, then her abnormality of the mind at the time of the act of strangulation was induced by her condition of alcoholism.

Here we can see scope for addiction to be offered as a partial defence, if only to the crime of murder, by underpinning an argument for diminished responsibility. As outlined above, such a finding would open up more lenient sentencing options, obviating the requirement of a life sentence. In fact, there are two different approaches offered here: one by which addiction can challenge the voluntariness of intoxication, and another by which addiction itself may be considered a brain injury sufficient to challenge rationality. In the former case, diminished responsibility is developed from acute, intoxicated brain state, which addiction may explain as involuntary. In the latter, however, it is developed from chronic, addicted brain state, which in itself may undermine the notion of behaviour being fully rational. This is an important distinction. Where addiction is proposed to explain intoxication as involuntary, this can only ever apply in the case of crimes committed whilst intoxicated. Suggestion that addicted brain state speaks directly to behaviour is, by contrast, a claim about global impairment with much broader application. How these two conceptions operate to inform judicial decision-making at sentencing is a question we will be considering in the coming chapters.

Developmental. Although not a defence to criminal liability, the law does take account of immaturity in assessing blameworthiness for acts. As already outlined, the age of criminal majority in England and Wales is 10. Once this age has been reached, liability can only be determined in common with adult offenders. However, accommodation is made for juvenile offenders (under 18 years of age) with altered procedures and different sentencing options, both of which are intended to reflect the general understanding of children lacking the control and rational judgment they will develop into adulthood.

Neuroimaging techniques have revealed the developmental course of the brain and given us insight into the structural and functional changes which take place from infancy into adulthood (Durstun et al., 2001; Gogtay et al., 2004). The picture we now have of the brain as it matures is one which accords with folk-psychological understanding of children's faculty for moral reasoning and behavioural restraint: they are far from fully developed (Selemon, 2013; Spear, 2013).

High-order neurological function is an emergent property of neural connectivity, and as such is developed not only through the extent of synaptic proliferation but also its refinement; an overabundance of connectivity can impede function just as readily as its absence (Craig & Bialystok, 2006). Neural development is characterized by the production of a super-abundance of neurons during childhood, followed by a pruning process which shapes functional connectivity (Petanjek et al., 2011). Now that we can observe this process through the use of advanced neuroimaging techniques, we can see that it does not take place in all areas of the brain simultaneously.

Brain areas such as those responsible for sensory and motor function develop and mature first, whilst areas associated with integrative, high-order functions, such as the prefrontal and lateral temporal cortices, are amongst the last to develop (Sowell, Thompson, & Toga, 2004). The systems which facilitate reward-seeking behaviour are amongst those which develop early. These are the mechanisms by which we are driven to action to satisfy our needs. In adulthood, these systems are regulated through top-down processes which, as we have seen, are believed to rely on the normal functioning of prefrontal cortical areas. Yet these are amongst the last areas to reach maturation in the human brain. The synaptic pruning process which mediates functionality does not begin in the prefrontal cortex until late adolescence and continues into an individual's early twenties (Gogtay et al., 2004). The young brain, then, exhibits a paucity of function in precisely that area which has been demonstrated to be essential for resisting impulses.

There is an increasingly sound scientific basis on which to argue for reduced criminal responsibility in the case of juvenile offenders (Steinberg & Scott, 2003). Developmental fMRI studies have repeatedly demonstrated the differential recruitment of prefrontal and subcortical regions in adolescent brains (Monk et al., 2003; Thomas et al., 2004), consistent with findings which have demonstrated that such elevated subcortical activity is associated with decision-making which shows bias towards

immediate over long-term rewards (McClure, Laibson, Loewenstein, & Cohen, 2004) and is correlated with risky choices (Kuhnen & Knutson, 2005).

We can therefore observe in children an example of unchecked motivational processes. Goal-oriented, novelty- or pleasure-seeking systems are developed and functioning, but operating with a lack of restraint. The underdevelopment of prefrontal areas results in a paucity of function in terms of both moral reasoning and self-control (Anderson, Bechara, Damasio, Tranel, & Damasio, 1999; Greene, Nystrom, Engell, Darley, & Cohen, 2004 ; Romer, 2010). As children mature into adolescence these areas develop very little, and their limited capacity for restraint is tested by a significant increase of activity in subcortical areas associated with motivation and drive. The increasingly impaired behavioural control exhibited by children as they become adolescents reflects the temporarily exaggerated responding of sub-cortical limbic regions associated with reward and the anticipation of reward (Ernst et al., 2005), coupled with the ongoing underdevelopment of prefrontal regions (Casey, Jones, & Hare, 2008).

There are many similarities, then, between the adolescent brain and that of the addict. Exaggerated responding of the subcortical limbic system driving impulsive action and riskier choices, twinned with limited functionality in prefrontal areas impairing behavioural control. Yet any argument for reduced responsibility on the grounds of functional impairment encounters an insurmountable difficulty: liability is a binary construct which cannot be attenuated. In the case of juvenile offenders, mitigation of criminal responsibility on account of age can only be addressed in sentencing outcome.

Another commonality between addiction and adolescence is that there is no scope for denying liability for criminal acts on the basis of addiction. Nor, for that matter, can addiction be likened under current legislation to excuses for offending such as duress or necessity. There is no route to exoneration for the addicted offender. However, where addiction may have an impact at the liability stage is as a factor influencing sentencing. The partial defences available to a charge of murder cannot remove culpability, but they may reduce it, and such reduction can only be reflected in moderated sentencing. It is only at sentencing that criminal responsibility can be assessed by degrees, so it is only there that suggestion of partially impaired control or rationality can be accommodated.

SENTENCING

Sentencing, to the outside observer, may represent the limited set of prescribed outcomes made necessary by the liability stage of criminal proceedings. The main purpose of a trial, after all, is the establishment of guilt or innocence. Yet it is sentencing upon which the substantive burden of attenuating responsibility is placed. As we have seen, the range of options for the denial or mitigation of responsibility at the liability stage of criminal proceedings is severely limited. If a defendant can be demonstrated to have been in even some small measure of control over their actions at the time of the offence, and acting with the required state of mind, liability attaches. Once liability has been established, sentencing is the stage to which questions over the extent of culpability are referred. The binary nature of the liability stage does not lend itself to incrementation. Rather, such considerations must be carried over and their validity and relevance accounted for through the range of sentencing options available.

The requirement of allowance for the individual facts and circumstances of the offence in question beyond that made in determining liability is clear, for example, in the way Courts treat juvenile offenders. The nature of a crime does not change in relation to the comparative youth of its perpetrator. If the actor in question is over the age of criminal majority, liability cannot be denied other than by those limited avenues available to their adult counterparts. Yet some account must be taken of age. If a country sets, as England does, the age above which criminal liability may be attached to actions at 9, it proceeds logically that a 10-year-old accused of a crime should receive identical treatment to that which would be extended to a 30-year-old facing identical charges. Yet this is plainly unsatisfactory. Account must be taken of a juvenile offender's developmental stage on the trajectory of maturation, and such nuance cannot be applied in the determination of liability. It can only be addressed in the application of procedural changes or, more commonly, through differential sentencing options.

This same is true of offenders who present some measure of mental impairment in defence of their actions. The liability stage removes the most severely afflicted offenders, but, as we have seen, the stringent requirements imposed for this to occur are rarely met. By far the majority of offenders who can genuinely lay claim to some measure of mental impairment do not pass these tests. Instead, what reduced culpability they might be apportioned can only be resolved in the moderation of sentencing.

In England and Wales, virtually all criminal cases start in Magistrates' Court.

Offences for which the maximum custodial sentence is greater than 6 months are referred to higher (Crown) Court, whilst the less severe offences - which constitute in the region of 95% of all cases - are retained and disposed of in Magistrates' Court. Magistrates are lay-judges drawn from the local community who volunteer their services. They do not require formal legal qualifications, but will have undertaken training, including Court and prison visits, to develop the necessary skills to perform their duties. In Court, Magistrates are assisted and provided legal and procedural advice by qualified clerks.

In deciding the appropriate sentence for a given offence, Magistrates and Judges use sentencing guidelines from the Court of Appeal and the Sentencing Council for England and Wales. The guidelines set out different levels of sentence based on the harm caused and how culpable the offender is. This provides an offence-based starting or 'anchor' point. Once this anchor point has been established, credit for a guilty plea is considered, usually amounting to a one-third reduction in the length of sentence. Following this, the guidelines provide general direction on the consideration of offender or offence characteristics which may serve to aggravate or mitigate offending, the length of sentence being adjusted accordingly.

The balance between judicial discretion and consistency in sentencing can be a difficult one to strike. With the aim of ensuring consistency, the Criminal Justice Act 2003 stated that the judiciary "must have regard to" guidelines in sentencing. The Coroners and Justice Act 2009 subsequently changed this language to the somewhat firmer "must follow", which led to suggestion that the new language represented a narrowing of discretionary sentencing powers (Magistrates' Association, 2009). Though the language was retained, an additional amendment was added to offset any concerns raised. Where before an explanation would be required if a sentence was given which fell outside the narrower category range, it would now only be required if it fell outside the overall offence range. As a result, whilst the language suggests a duty to comply with the guidelines, the result was in reality a widening of the discretionary sentencing powers Magistrates and Judges could bring to bear, particularly in deciding whether and to what extent mitigating or aggravating factors may reduce or increase sentences (Roberts, 2011).

The sentencing guidelines do not provide direction on the matter of addiction. Whilst they do lay out a range of potentially aggravating or mitigating factors, it is

underlined that these lists are not intended to be exhaustive, and nowhere is it stated that addiction is excluded from operation as one such factor. The guidelines include “mental illness or disability” (Sentencing Council, 2017, p. 20) as a potentially mitigating factor indicating significantly lower culpability for offending, and the neurobiological disease model of addiction would arguably bring it within this category. However, “commission of an offence while under the influence of alcohol or drugs” (p. 20) is given as an aggravating factor indicating higher culpability. Whether the phrasing “under the influence” refers specifically to behavioural impairment resulting from acute intoxication or may be interpreted more broadly as the longer-term impact of repeated consumption is left unaddressed.

Section 142 (1) of the Criminal Justice Act 2003 lays out the five purposes of sentencing to which courts must have regard: (i) the punishment of offenders; (ii) the reduction of crime (including its reduction by deterrence); (iii) the reform and rehabilitation of offenders; (iv) the protection of the public; (v) the making of reparation by offenders to persons affected by their offences. In the absence of specific guidance or directive, it is from the weighing of these principles that appropriate sentencing is drawn. No suggestion is made that any one principle is more important than any other, nor is it given that they are to be held equal regard. It is for sentencers to determine the relevance of each principle and the weight they accord them in deciding the appropriate sentence.

As we have seen over the preceding sections, issues surrounding the rationality of offenders or the volitional nature of their offending rarely meet the criteria for the complete denial of responsibility. As a result, such factors are invariably addressed at sentencing. The discretion extended to sentencers here, both in determining the appropriate sentence and over which factors may be incorporated into that determination, acknowledges that “the purposes of punishment are manifold and each element will assume a different significance not only in different crimes but in the individual commission of each crime... ultimately every sentence imposed represents a sentencing judge’s instinctive synthesis of all the various aspects involved in the punitive process” (*R v. Williscroft*, 1975, pp. 299-300). Given this, the manner in which drug-use and addiction are regarded by the judiciary is given clearest expression in sentencing practice, and it is therefore here that we shall focus our attention over the coming chapters.

THESIS STRUCTURE

The following four chapters comprise a series of studies designed to probe the impact of addiction and intoxication on Magistrates' sentencing decisions. All of our participants were English and Welsh Magistrates.

In Chapter 2 we examine the extent to which neurobiological deficits associated with addiction serve to mitigate criminal responsibility when attributed to alternate aetiology. We also investigate the role of choice across different aetiologies, determining that perceived choice in the initiation of a condition to which deficits are attributed plays a pivotal role in subsequent determinations of criminal responsibility.

In Chapter 3, we develop mixed aetiologies in which addiction is either followed or preceded by a co-morbid brain disease and contrast impressions of culpability in these instances with those formed of addiction or disease in isolation. We also further investigate the role of choice in extended aetiology by examining the extent to which the addict being either juvenile or adult when first drug-use occurred informs sentencing decisions.

The study presented in Chapter 4 examines the function of choice in continued drug-use, contrasting addiction maintenance narratives which include some measure of abstinence. We also re-examine the impact of choice in drug-use initiation, replicating the finding that choice in the genesis of addiction can direct impressions of its aggravating or mitigating nature.

The final study, presented in Chapter 5, considers addiction and intoxication as they relate to one another in criminal sentencing by presenting them separately or in combination. We demonstrate circumstances under which intoxication can serve to mitigate criminal responsibility, together with the tendency of alcoholism to aggravate it.

Chapter 2. Addiction and choice:

The role of perceived choice in the sentencing of addicted offenders.

Abstract

Whether the prevailing neuroscientific model of addiction as a brain disease informs questions around moral and criminal responsibility continues to fuel debate, but empirical evidence is lacking. The greater part of the existing literature is concerned with the liability stage of criminal proceedings, and experimental work is most commonly conducted using mock jurors or members of the public. Whereas liability is binary, responsibility is commonly placed on a spectrum when Judges are deciding the appropriate criminal sentence for an offender. We wanted to investigate the factors which informed such judgments in practical application. We therefore asked 108 Magistrates to consider criminal sentencing scenarios which included evidence of a defendant's brain damage and impaired impulse control resulting from either a (fictional) disease or from addiction to and use of heroin. Custodial sentences were significantly reduced when the identical neuropsychiatric profile resulted from a disease, but not when caused by heroin use and addiction. The pivotal factor denying addiction the mitigating power of disease was perceived choice in the initial acquisition; removing choice from addiction dramatically increased the odds of leniency, while attaching choice to disease tended to aggravate or reverse earlier leniency. Our results indicate a dramatic effect of impairment aetiology on judgments of criminal responsibility and suggest that addiction is not considered in common with diseases of the mind in determinations of culpability for wrongdoing.

If a madman commit a felony he shall not lose his life for it, because his infirmity came by the Act of God; but if a drunken man commit a felony, he shall not be excused, because his imperfection came by his own default.

Lord Bacon
Elements of the Common Lawes of England (1630)

If criminal success is measured by avoiding punishment, then addicted criminals rank somewhere near the bottom. Even when controlling for the fact that substance-abusers are more than three times as likely to commit crimes than their sober counterparts, they are more likely to be arrested (Stevens, 2008) and much more likely to commit further detected crimes upon release (UK Drug Policy Commission, 2008). While some of these offences relate directly to the possession and/or supply of illicit substances, the majority are accounted for by acquisitive crimes (e.g. shoplifting, mugging or burglary) or, in the case of cocaine or alcohol, offences of a violent or sexual nature. The net result is that, among arrestees, 50% abuse and/or are dependent on drugs, more than half of whom regularly take Heroin (Wilson, 2011). Once imprisoned, the opportunity for drug use only increases, with in the region of 40% of heroin- and cocaine-using prisoners reporting first using them in prison (Boys et al., 2002; Light, Grant, & Hopkins, 2013), contributing to a drug trade in UK prisons with an estimated value in excess of £100 million per annum (Centre for Social Justice, 2010).

The inextricable link between addiction and crime is reinforced by the cultural understanding of addiction as a state tied to moral failing, with the result that any negative consequences are undeserving of sympathy on the part of the ordinary (non-addicted) citizen. Moreover, high recidivism rates suggest that such failing is not momentary, but rather a persistent and potentially immutable characteristic of the addict. A heightened tendency towards criminality and an apparent intractability of bad character perhaps go some way towards explaining why a majority of the public admit to having a general ‘dislike’ of addicts, together with a willingness to accept discriminatory practices against them and a general skepticism of policies aimed at

helping them (Barry, McGinty, Pescosolido, & Goldman, 2014).

Conversely, an increasing number of academic scientists, health professionals and influential media figures cite evidence of drug-related brain changes and resultant deficits in mental function as reason to raise legitimate questions about whether or to what extent we should be holding addicts responsible for their addiction and associated behaviour. Where that behaviour is criminal, questions surrounding the existence and extent of responsibility, and hence blameworthiness, are paramount.

Contemporary neuroscience offers us unprecedented insights into the addict's brain and how drugs hijack or usurp normal structure and function in brain areas like the prefrontal cortex (PFC), a region implicated in 'normal' executive function, rational decision-making and impulse control (Alexander, Stuss, Picton, Shallice, & Gillingham, 2007; Aron & Poldrack, 2005; Bari & Robbins, 2013). Some have even pointed to this region as the neural substrate underlying moral reasoning (Loeben & Stoeck, 2007). To many, such findings raise legitimate questions over the extent to which addicted criminal offenders possess the requisite cognitive and volitional capacities to be held morally or criminally responsible for their actions in the same way as non-addicts (Leshner, 1997). As succinctly captured by criminal law theorist H. L. A. Hart, it is a prerequisite of justice that "those whom we punish should have had, when they acted, the normal capacities, physical and mental, for doing what the law requires and abstaining from what it forbids" (1968, p. 152)³. This notion is clearly reflected in how Courts consider minors, moderating criminal responsibility by virtue of the extent to which juveniles may be less capable of considering their actions or controlling their impulses. In recent years, Courts have increasingly cited neuroscientific evidence of prefrontal cortical immaturity to support the idea that juvenile offenders lack the 'normal mental capacities' which form part of the standard for responsibility under the law (Steinberg, 2013). Yet brain imaging studies in a similar vein have developed a wealth of evidence suggesting structural and functional changes in the brains of substance-abusers, including in the PFC. Should similar account not be taken of the addict's different brain state in holding them accountable for resulting behaviour? Or does the fact that addiction implies an initially voluntary choice to use drugs, and thus that addicts can be

³ See also the US Model Penal Code (4.01, 1985) in the context of insanity defences, noting that "a person is not responsible for criminal conduct if at the time of such conduct as a result of mental disease or defect he lacks substantial capacity either to appreciate the criminality (wrongfulness) of his conduct or to conform his conduct to the requirements of the law" (p. 61).

seen as having themselves brought about the conditions which speak to mitigation, block considerations of this kind? Given that drug-using offenders make up the majority of the prison population (HMIP, 2015a), are significantly more likely to re-offend following release, and are estimated to be responsible for anywhere from 60% to 90% of all acquisitive crime (Birt, 2003), the importance of these questions goes beyond the theoretical.

An examination of recent case-law offers contradictory views. While some Courts have considered evidence of drug-use and addiction as aggravating, even when introduced as a mitigating factor (Bjerregaard, Smith, Fogel, & Palacios, 2010; Blume, Johnson, & Sundby, 2008), others explicitly cite neurocognitive deficits associated with drug use and addiction as grounds for extending leniency. In a recent sentencing opinion in *US v. Hendrickson* (2014), for instance, the Judge noted “because addiction is a serious brain disease that diminishes one’s capacity to evaluate decisions and regulate behavior, I consider addiction to be a generally and substantially mitigating factor” (at 1176)⁴.

The apparent incoherence in the use of addiction-related evidence by criminal courts risks inequity in sentencing and begs empirical study into sentencers’ reasoning in cases involving addiction. However, studies even tangentially touching on these issues tend to do so in the context of the most serious and hence rarest of offences (Bjerregaard et al., 2010), rather than the ‘run-of-the-mill’ offences which comprise the overwhelming majority of cases seen by Courts and constitute the greatest economic and social burden of crime. Moreover, to our knowledge, no studies in this context have queried those actually tasked with sentencing criminal offenders.

Given that in the region of 95% of all crime in England and Wales is dealt with in Magistrates’ Court, it is Magistrates who are most frequently called upon in such instances to gauge criminal responsibility by degrees. In asking how Courts regard addicted offenders, it is to Magistrates we must turn in seeking to bridge our understanding of theory and practice. Though they have sentencing guidelines to assist them, it is in their individual considerations which are weighed the many factors potentially serving to aggravate or mitigate offending. Which of these factors hold weight in such a balancing is a question of more than academic interest - it is current

⁴ See also the more recent case of FBI agent Matthew Lowry (*US v. Lowry*, 2015) in which the presiding Judge Thomas F. Hogan explicitly cited *US v. Hendrickson* as providing the basis for considering addiction a generally mitigating factor (pp. 99-100).

legal thinking in its practical application, moreover in the context where it is most commonly applied.

We hypothesized that identical impairment would result in different sentencing depending on its aetiology. We anticipated that a description of structural and functional brain changes associated with altered behavioural output would lead to leniency in sentencing if attributed to a fictional brain disease, and not when described as the consequence of addiction. Theorizing that the impression of initial choice in drug-use would be the primary distinguishing factor here, we anticipated that subsequent explicit evidence of our defendant's initial drug use having been outside his control would inspire leniency previously withheld while, conversely, suggestion that their past decisions contributed to their developing our fictional disease would establish a blameworthy choice sufficient to block mitigation and even aggravate. We also predicted that additional testimony indicating that our defendant had committed the crime with the intention of self-medicating his neuropsychological symptoms (Stage 4) would further undermine impressions of blameworthiness in the case of the addict (by virtue of their attempting to 'kick' their addiction to heroin), while reinforcing the view of the disease sufferer being culpable in their condition by virtue of their continuing choice to avoid treatment by self-medicating.

Method

Participants. A total of 110 active and retired Magistrates were recruited by invitation and directed to a survey link made available through the member's internal webpage of the England and Wales Magistrates' Association. Additionally, cards inviting individual Magistrates to participate by visiting the website were distributed at London's Westminster, Hammersmith and Richmond Courts. Of the 110 respondents, one was excluded for cause (see Measures on page 48), leaving 109 surveys to be included in the initial data analysis. Five respondents did not complete the full survey. Of the remaining 104 completed responses, 11 were excluded from portions of the analysis for the reasons given below.

As agreed in advance with the Magistrates' Association and explained to respondents at the start of the survey, all responses were recorded anonymously and no personal details, including age or sex, were collected.

This study was conducted in accordance with the British Psychological Society's

Code of Ethics and Conduct. Informed consent was collected in advance and all respondents were debriefed and given the opportunity to withdraw their responses following participation. The study protocol was approved by the Research Ethics Committee of the University of Sussex.

Design. A within-between-subjects design was used, with each participant being consecutively presented with new trial evidence across four stages and, depending on two independent variables, randomly assigned to one of four experimental conditions (see Figure 2.1). At Stage 1, all participants were presented with the facts of a hypothetical case and recorded an initial sentence in light of these. The independent variables were the potentially mitigating factors introduced at the different stages. At Stage 2, this was the distinction between the aetiology of the neuropsychiatric profile as either a fictional disease or addiction to and use of heroin. At Stage 3, a second independent variable was introduced by providing new evidence of the defendant's past choices contributing to the aetiology. At Stage 4, evidence of a self-medication motive for the crime was presented. The dependent variable remained identical across all stages and measured the length of custodial sentence selected by respondents.

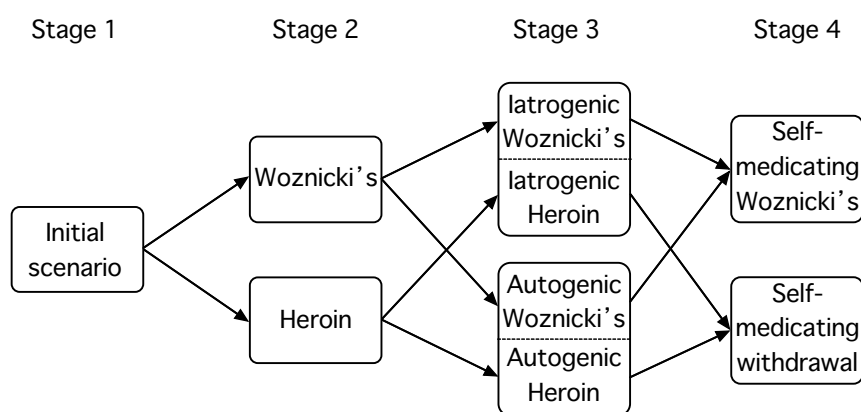


Figure 2.1 - Group schematic of conditions.

Procedure. Survey materials were developed and administered using the Qualtrics software platform and were hosted through their server (Qualtrics, Provo, UT). After clicking the link provided through the Magistrates' Association's webpage, respondents were presented with an introductory page which provided them with a brief outline of what was to follow, together with information on their ability to withdraw at any time during the survey. Once respondents clicked the 'continue' button, they were instructed

that they would be presented with the details of a crime, and that it was their task to assign an appropriate sentence after considering the facts of the case. It was explained that, subsequent to the presentation of these primary facts of the case and their initial sentencing decision, additional evidence would be introduced in a staged manner and they would have the option of modifying their initial sentence in light of this new information. To indicate their sentence decisions, respondents were provided with a 26-point sliding scale that was reset to the minimum value (1 week) at each subsequent stage to reduce the likelihood of respondents 'clicking through' with the same value, and to ensure that each new answer had to be considered before being selected. The reading on the scale was recorded once the 'continue' button was clicked.

At Stage 1, all respondents received an identical scenario outlining a crime committed by the defendant. Respondents were presented with the following facts of the case:

John is 27 years old and unemployed. He has never been convicted of a crime. In January of this year he broke into a pharmacy. Having previously worked in the pharmacy as a cleaner, he knew that the staff sometimes left the side door open for the cleaner when they left in the evening. Having waited for the staff to leave, he tried the door and it opened. He entered, went behind the counter and took £100 worth of Vicodin, a prescription semi-synthetic opioid painkiller. John was identified by two eye-witnesses leaving the premises and arrested later that evening. Faced with an overwhelming case for the prosecution, he has entered a plea of guilty to the charge of non-domestic burglary.

Immediately after reading these facts of the case, respondents were instructed that:

Guidelines suggest that John be sentenced to serve between 10 and 26 weeks. Optionally, his sentence may be reduced in light of John having entered a guilty plea. Your task is to decide the appropriate sentence. For how many weeks should John go to prison?

Magistrates were able to indicate their sentence decision on the sliding scale located underneath the question and to consider their decision without time constraint until clicking the 'continue' button. At subsequent stages participants were provided with the same 1-26 week sliding scale on which to enter their sentencing decisions.

At Stage 2, respondents were informed that John wished to introduce new information concerning a neuropsychiatric condition to be taken into consideration in deciding whether and to what extent they wished to alter their initial sentence. All respondents were informed that John's condition included the following neurobiological

and behavioural symptoms:

... reduced grey matter volume in the prefrontal cortex, an area of the brain associated with action inhibition. Damage to this area has been demonstrated to result in impulsive behaviour and a lack of self-control.

Magistrates were randomly assigned to one of two independent conditions depending on the aetiology of John's neuropsychological symptoms. Respondents assigned to the Disease condition learnt that John's neuropsychological profile had resulted from him suffering from a (fictional) disease called 'Woznicki's'. By contrast, respondents assigned to the Addiction condition learnt that his symptoms had resulted from his addiction to and use of Heroin. The symptoms being described in identical terms, the respondent conditions differed only in the outlined aetiology of John's condition. Respondents were then asked to once again indicate on a sliding scale the sentence they felt was appropriate for the crime, given the new information with which they had been presented.

At Stage 3, respondents within the Disease and Addiction conditions were again randomly assigned to one of two independent groups, offering further details of John's culpability in the development of his condition, being either self-induced by past choices (autogenic) or resulting from a physician's error and having thus been outside his control (iatrogenic).

Respondents in the Iatrogenic (no choice) conditions were informed either that the early stages of John's disease had gone undiagnosed due to an oversight on the part of his doctor (Iatrogenic Disease), or that John's addiction had resulted from his doctor's mismanagement of his legitimate pain medication (Iatrogenic Addiction). In both groups it was offered that the physician responsible was later disciplined for the error, lending credence to the notion that the fault for the initial steps towards John's current condition lay with someone other than himself. Conversely, respondents in the Disease or Addiction groups assigned to an Autogenic condition learnt that the origins of John's current state lay in part with his past decisions, either to refuse medical treatment (Autogenic Disease), or to self-medicate symptoms of depression (Autogenic Addiction) (see Table 2.1).

Table 2.1 - Aggravating or mitigating circumstances presented across Aetiology and Choice conditions.

Condition		
Choice	Aetiology	Additional information
Autogenic	Addiction	John was in his late teens when he became addicted. Six months earlier, his doctor had diagnosed him as suffering from depression. John says that he began taking heroin because of the depression that he was suffering at the time.
	Disease	John was in his late teens when his disease manifested. Treatment at this early stage would have prevented the later onset of symptoms such as impulsivity and anti-social behaviour. However, although the early signs of the disease were noticed by his doctor, John chose not to receive treatment and his condition grew more severe. Six months earlier, his doctor had diagnosed him as suffering from depression, and John says that he refused to receive treatment because of the depression that he was suffering at the time.
Iatrogenic	Addiction	John was in his late teens when he became addicted. He was hit by a car and spent several weeks in hospital, during which time he was regularly receiving morphine, an opioid painkiller. His regimen of painkillers was mismanaged and, although he recovered from his physical injuries, John had developed an addiction to morphine by the time he left the hospital. He says this led to him becoming a heroin user. The doctor in charge of John's care later faced disciplinary charges for this and several other instances of professional misconduct.
	Disease	John was in his late teens when his disease manifested. Treatment at this early stage would have prevented the later onset of symptoms such as impulsivity and anti-social behaviour. However, the early signs of the disease went unnoticed by his doctor and his condition grew more severe. The doctor in charge of John's care later faced disciplinary charges for this and several other instances of professional misconduct.

At Stage 4, participants were informed that John had stolen the drugs for the purposes of self-medicating his ongoing symptoms (Disease condition) or his planned withdrawal from Heroin (Addiction condition). The option was provided for sentences to be altered in light of this new information.

Finally, all respondents were instructed that John would like to receive treatment for his condition in the form of a 12-week residential program. Participants were informed that in order for John to receive such treatment, he would require a community order instead of a custodial sentence. Respondents were then asked if they would be willing to see John sentenced to a community order and, if so, for how many months it should run. Those unwilling to offer diversion to treatment were instead asked to make one

final indication as to how long John's custodial sentence should be.

After completing all stages of the survey, a final page was presented containing a debriefing statement outlining the purpose of the study and the fictional nature of Woznicki's disease, clarifying that the neurological impairment outlined was that associated with Heroin use. It further reminded all respondents that they were free to withdraw from the study and have their answers removed at any time. An e-mail link was included and all participants were advised to use this link should they wish to have their responses withdrawn. Questions or comments regarding the study were also invited and, finally, participants were thanked for their time.

Measures and analyses. Length of sentence in weeks at each of the adjustment stages was transformed into percentage change from the initial anchor sentence indicated at Stage 1. Apart from controlling for absolute differences in the initial anchor sentences, the use of percentage change (rather than absolute change) more accurately reflected the fact that a week removed from a two week sentence (50% reduction) is a relatively greater expression of leniency than a week removed from a 20 week sentence (5% reduction).

We determined in advance that any response set which began at Stage 1 and ended at Stage 4 with a value above the scale midpoint (13 weeks) but fell to 1 week at either Stage 2 or Stage 3 would be considered an error arising from the default return to minimum and that those results would be omitted. A single participant met this criterion and was excluded from the analysis. Where results were analyzed in terms of percentage change in sentence, the greatest possible decrease in sentence was necessarily less than 100%. Given this, allowing the greatest increase in sentence to exceed 300% was regarded as having the potential to bias the results in favour of a perceived overall increase. A single respondent met this criterion and was temporarily excluded from analysis conducted in percentage terms at the stage where the increase was made.

The likelihood of sentence reduction by Magistrates at the different stages was quantified by calculating odds ratios. In this context, the odds ratios represent the likelihood that a Magistrate would change their sentence after exposure to a particular set of information, compared to the odds of sentence reduction occurring in the absence of such information, or in the presence of different information. Eight respondents selected an initial anchor sentence of one week, leaving no possibility of

reducing their sentence at subsequent stages, and were therefore excluded from odds ratio analyses. Three additional respondents reduced their sentence to one week at later stages and were consequently excluded from subsequent odds ratio analyses. For these reasons, the number of participants in each condition varied across stages and in line with analytical approach. Full details of odds ratio calculations are shown in Appendix C on page 177.

Bayes Factor calculations were also conducted to augment odds ratio analyses at Stages 2, 3 and 4, deriving prior probability distributions from the observed effect at preceding stages. Bayes Factor calculation parameters for the tests conducted in this study are outlined in Appendix G on page 182. Full details of the Bayesian approach adopted and a guide to Bayes Factor interpretation are provided in Appendix F on page 180.

Power and effect-size calculations were performed using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007).

Results

Magistrates' initial anchor-sentences varied along the full range available to them (1-26 weeks), but skewed towards the lower two-thirds to distribute around an average sentence of 9.1 weeks ($SEM \pm 0.5$) imprisonment.

Addiction v. Disease. The distributions of results in the Woznicki's and Heroin conditions were significantly non-normal [Woznicki's $D(52)=0.30$, $p<.001$; Heroin $D(56)=0.44$, $p<.001$] and exhibited inequality of variance [$F(1,106)=8.1$, $p=.005$]. Therefore, a non-parametric statistical approach was employed for comparisons of percentage reduction in sentence.

Despite identical neuropsychiatric profiles, the different aetiologies had a dramatic effect on sentencing judgments; in the Disease aetiology condition ($n=52$), Magistrates reduced their initial anchor sentence by an average of 17.1% (or 1.6 weeks) compared with only 7.1% (or 0.5 weeks) on the part of those in the Addiction aetiology condition ($n=56$) [$U=1075.5$, $z=-2.79$, $p=.005$ (two-tailed test), $r=0.48$, power=0.68] (see Figure 2.2).

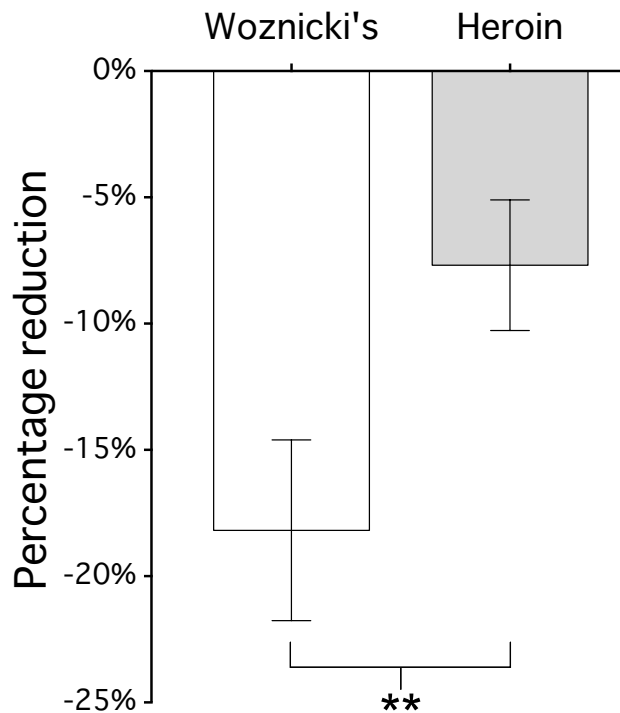


Figure 2.2 - Mean percentage reduction of initial sentence at Stage 2 in Woznicki's and Heroin conditions ($N=107$; error bars ± 1 SEM; ** $p < .01$).

Importantly, this difference was driven by *whether* Magistrates chose to reduce their initial sentence (Figure 2.3a), rather than the extent by which they reduced it when they chose to (see Figure 2.3b); with 49% of Magistrates ($n=24$) reducing their initial sentence in the Disease aetiology and only 23% ($n=12$) in the Addiction aetiology condition, John's odds of receiving a reduced sentence dropped by more than 3 times if his testimony mentioned Heroin addiction as the cause of his neuropsychological deficits [OR=3.2, 95%CI=1.4-7.5, $X^2=7.4$, $p=.007$] (see Figure 2.5).

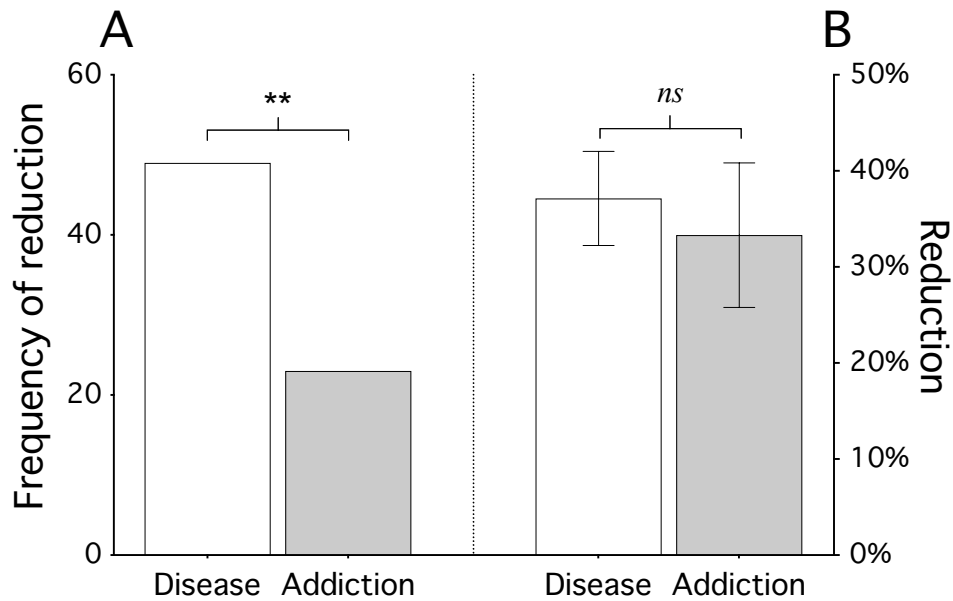


Figure 2.3 - (A) Relative frequency of sentence reduction at Stage 2 in the Disease and Addiction Aetiologies ($N=101$); (B) Mean percentage change from initial sentence excluding null respondents ($n=36$; error bars ± 1 SEM; ** $p < .01$).

Autogenic v. Iatrogenic. Introducing information regarding the Autogenic (choice) or Iatrogenic (no choice) origin of impairment had a powerful effect on leniency in sentencing. Iatrogenic origin of Woznicki's was associated with a greater likelihood of receiving a reduction in the length of sentence [OR=3.4, 95% CI=0.8-14.9, $X^2=2.8$, $p=.10$, $B_{H(0, 1.16)}=2.5$], whilst iatrogenic origin of addiction dramatically increased the chance of receiving a reduced sentence [OR=12.0, 95% CI=1.4-105.4, $X^2=7.0$, $p=.008$, $B_{H(0, 1.16)}=5.0$]. A Cochran-Mantel-Haenszel estimate of the pooled odds ratio demonstrated that the likelihood of sentence reduction was significantly greater in the event that impairment aetiology had iatrogenic origins [OR_{pooled}=5.4, 95% CI=1.6-18.6, $X^2=7.5$, $p=.006$, $B_{H(0, 1.16)}=17.4$] (see Figure 2.5).

Once the additional information regarding a self-medication motive for the crime was introduced at Stage 4, Magistrates in the Iatrogenic Disease condition ($n=26$) were four times as likely to reduce John's sentence as those in the Autogenic Disease condition ($n=22$) [OR=4.0, 95% CI=1.03-15.53, $X^2=4.2$, $p=.04$, $B_{H(0, 1.16)}=4.4$] (see Figures 2.4 and 2.5). In parallel, participants in the Iatrogenic Addiction condition ($n=27$) were more than 20 times as likely to reduce John's sentence than those in the Autogenic Addiction condition ($n=29$) [OR=20.3, 95% CI=2.4-175.3, $X^2=11.6$, $p=.001$, $B_{H(0, 1.16)}=11.6$].

1.16)=9.7].

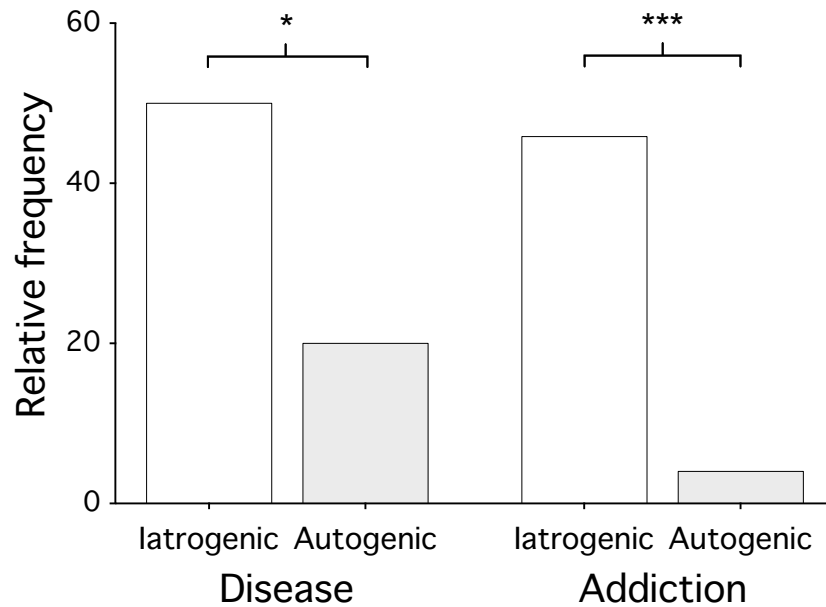


Figure 2.4 - Relative frequency of sentence reduction across Stages 3 and 4 in Iatrogenic (no choice) and Autogenic (choice) conditions across both Disease and Addiction Aetiology conditions (* $p < .05$, ** $p < .01$, *** $p < .001$).

Across both Disease and Addiction aetiologies, a Cochran-Mantel-Haenszel estimate of the pooled odds ratio demonstrated a sevenfold greater likelihood of sentence reduction in the Iatrogenic, ‘no choice’ groups when contrasted with the Autogenic, ‘choice’ groups [$OR_{pooled} = 7.2$, 95% CI=2.28-22.67, $X^2 = 12.7$, $p < .001$, $B_{H(0, 1.16)} = 87.0$].

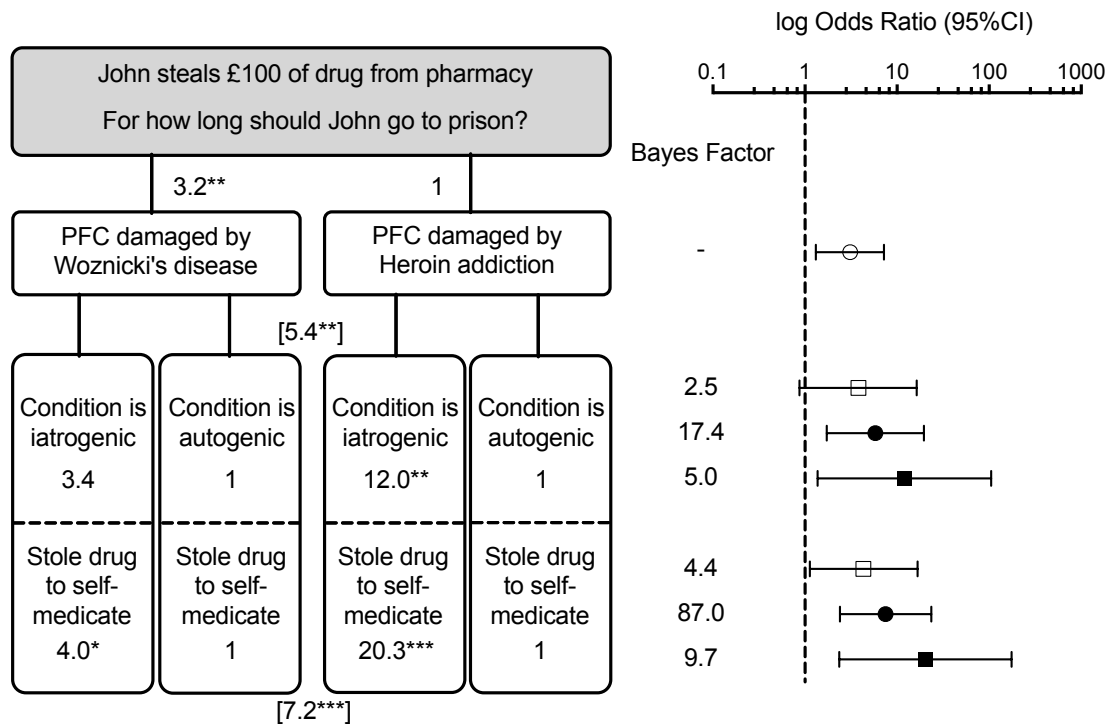


Figure 2.5 - Calculated Odds Ratios and associated Bayes Factors for sentence reductions by Magistrates at different stages of Anchor-and-Adjust sentencing (* $p < .05$, ** $p < .01$, *** $p < .001$; Open circle = Disease vs. Addiction; Open squares = Iatrogenic/no-choice vs. Autogenic/choice origin of Disease; Closed squares = Iatrogenic/no-choice vs. Autogenic/choice origin of Addiction; Closed circles = Pooled odds ratio Iatrogenic/no-choice vs. Autogenic/choice).

Total reduction and final sentence. The distributions of results in the Woznicki's and Heroin conditions exhibited equality of variance [$F(1,101)=3.1$, $p=.08$], but were significantly non-normal [Woznicki's $D(48)=0.28$, $p<.001$; Heroin $D(55)=0.38$, $p<.001$]. Therefore, a non-parametric approach was taken to analysis of percentage reduction. Mean percentage reduction in sentence length across all stages was greater in the Disease conditions ($n=48$, $M=-21.9\%$, $SD=30.6$) than in the Addiction conditions ($n=55$, $M=-13.4\%$, $SD=24.9$) [$U=1090.5$, $z=-1.72$, $p=.04$, $r=0.30$, $\text{power}=.44$] (see Figure 2.6). In the Disease condition, sentence reduction was significantly greater [$U=170$, $z=-2.59$, $p=.004$, $r=0.65$, $\text{power}=.57$] in the Iatrogenic group ($n=26$, $M=-31.0\%$, $SD=33.1$) than in the Autogenic group ($n=22$, $M=-11.1\%$, $SD=23.8$). Similarly, in the Addiction condition, mean sentence reduction in the Iatrogenic group ($n=27$, $M=-20.5\%$, $SD=28.3$) was significantly greater [$U=256$, $z=-2.46$, $p=.007$, $r=0.56$, $\text{power}=.70$] than in the Autogenic group ($n=28$, $M=-6.5\%$, $SD=19.2$).

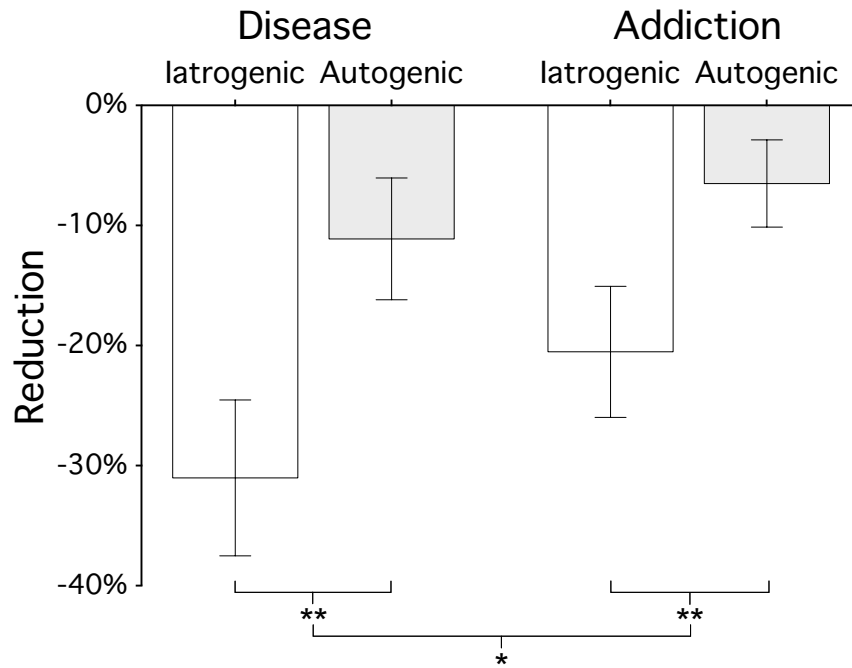


Figure 2.6 - Mean percentage sentence reduction over all stages in Iatrogenic (no choice) and Autogenic (choice) conditions across both Disease and Addiction aetiologies (error bars ± 1 SEM; * $p < .05$, ** $p < .01$, *** $p < .001$).

In real terms, the distinction between choice in addiction and no choice in disease was the difference between 5.5 and 9.1 weeks imprisonment (see Figure 2.7).

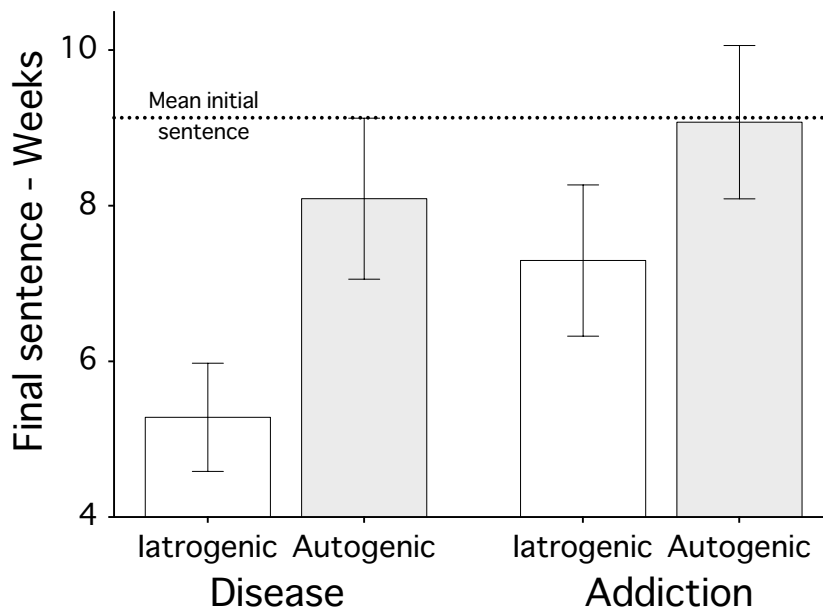


Figure 2.7 - Mean final sentence in weeks in Iatrogenic (no choice) and Autogenic (choice) conditions across both Disease and Addiction aetiologies (error bars ± 1 SEM).

Discussion

John's *prima facie* case for reduced culpability rests with his neuropsychological profile and how his diminished impulse-control may have contributed to the crime. That the odds of leniency vary dramatically with the aetiology of these symptoms indicates that leniency in sentencing was moderated by considerations beyond the immediate and wider circumstances of the crime. One such consideration is rooted in what some legal philosophers have termed 'diachronous responsibility' (Khoury, 2013; Vincent, 2013); even if his symptoms present a legitimate claim for reduced culpability (as evidenced in the Disease condition), John the heroin addict is deemed responsible for having chosen to use the drugs to which he subsequently became addicted, thereby restoring culpability. Both his initial use, and his subsequent failures to avoid further use, contravene the mitigating relevance of his neurobiological deficits. As outlined in the Introduction, in law diachronous responsibility is addressed at the liability stage of proceedings by means of 'prior fault' (see page 24). Yet we observed leniency in respect of neurological deficits being blocked where those deficits were attributed to addiction, suggesting the operation of a similar logic in sentencing decisions.

John's odds of sentence reduction were improved by testimony that he was seeking to control his addiction to heroin by self-medicating his withdrawal. This additional leniency was in keeping with the view of culpability being derived not only from the choice to become addicted, but also from repeated failure to curtail use. Conversely, similar evidence of self-medication in the Disease aetiology was equally as likely to lead to increases in sentence as it was to reductions.. In fact, Magistrates observed to increase their sentence were those that had earlier reduced it, suggesting a reversal or retraction of leniency they had previously extended. Although this reversal was in line with our prediction, we cannot rule out additional factors driving this effect. The self-medication evidence may have suggested planning and intent (rather than impulsivity) and/or a perception of future dangerousness resulting from the implied need for John to commit further crimes to ensure ongoing supply of drugs.

There is a sense in which it is less than noteworthy to detect the pivotal role of choice in the determination of blameworthiness. The law is not normally concerned with punishing involuntary behaviour. However, we must consider that the putative basis upon which leniency was advocated in this instance was the neurobiological picture of disrupted self-control. This was a picture which, in the context of an acquired disease,

demonstrably served to mitigate criminal responsibility. Mitigation in the context of addiction was not similarly forthcoming until choice in the initiation of drug-use was explicitly contradicted.

It would appear that perceived initial choice in the acquisition of drug-using habits is a pivotal factor distinguishing addiction from other diseases of the mind/brain in the consideration of Magistrates; ‘adding’ choice to a disease made it analogous to addiction, while ‘removing’ choice from the addiction narrative increased the probability of leniency to 60%, in line with that of a disease (70%) and, critically, well beyond that afforded to a ‘typical’ addict (16%).

It might follow from this that Magistrates do not consider addiction to be a disease, but for the fact that, when sampled elsewhere, over three-quarters of them express agreement with the statement ‘addiction is a disease’ (see Appendix B on page 171). We could perhaps surmise that those tasked with addressing the material consequences of immorality consider drug-abuse revealing of criminal character, but for the fact that four-fifths of those sampled disagree with the statement ‘drug addiction is evidence of a lack of moral character’ (p. 171). It is difficult to reconcile these seemingly conflicting impressions.

To be clear, our findings do not serve to identify any bias in sentencers, but rather highlight an area of criminal law and moral philosophy that is fundamentally problematic: prior fault. This is the term applied in law to the doctrine by which diachronous responsibility denies the excusing power of circumstances which defendants have, either through negligence or intentional action, themselves created (Robinson, 1985). Establishing prior fault rests on determining whether such actions were voluntarily undertaken and this can present a challenging task in its own right. In the case of addiction, the Court shoulders the additional burden of acting as both neuroscientist and moral philosopher in judging the ‘voluntariness’ of drug use. In the absence of clear guidance, such judgments are inescapably *ad hoc* and likely to vary in line with prevailing folk-psychological beliefs.

Advocates of reform frequently cite new neuroscientific understanding of addiction-related molecular, cellular and synaptic changes in the brain as their rationale. As one Director of the National Institute on Drug Abuse (NIDA) famously noted, “even if [addiction] initially comes about because of a voluntary behavior (drug use), an addict’s brain is different from a non-addict’s brain, and the addicted individual must be dealt

with as if he or she is in a different brain state” (Leshner, 1997, p. 46). Our findings indicate that whether addicts are likely to be held morally or criminally responsible for their actions depends not on the scientific and legal credibility of their current state of addiction, or its pathological ‘disease-like’ nature, but rather on what might be described as the understanding that addiction “initially comes about because of a voluntary behavior”. In prefacing his thought with such a caveat, Leshner identifies a principal obstacle in advancing the understanding of addiction as a disease in criminal Court judgments concerning addicted offenders.

Whilst we might propose that the drug-taking behaviour of the addict is to a degree beyond their control, such that current drug-taking might be conceived as less than completely voluntary, it is difficult to construct a similar argument with regard to first drug-use. Our increasingly detailed picture of the brain following repeated drug exposure is one which includes progressive structural and functional alterations to areas associated with the ability to exert control over behaviour. Whilst this need not undermine the notion of voluntariness in action, it certainly puts it to question. The logic which follows is deceptively simple: if self-control has been impaired by repeated drug exposure, then there was a time before first drug use when it was unimpaired. An individual can thereby be held accountable for an unimpaired, voluntary choice to first use drugs, irrespective of how compulsive or uncontrollable subsequent drug-taking behaviour might be argued or judged.

Yet this, in turn, raises interesting but difficult questions about the voluntary nature of first drug use when such use takes place (as it most frequently does) during adolescence (SAMHSA, 2014a; Home Office, 2014). The immaturity of the PFC during adolescent neurodevelopment is increasingly recognized by academics and Courts alike as diminishing criminal responsibility in the case of juvenile offenders, with the associated impulsivity and lack of the ‘normal’ restraining powers of adulthood being commonly understood as strong bases on which to withhold prosecution or moderate sentencing (Steinberg, 2013). If the legal view of adolescent choices is one that suggests reduced culpability for their consequences, should not similar reasoning maintain in the event of addiction as one such consequence? We more explicitly examine these issues in the next chapter.

However, context is important in criminal judgment. One limitation of the present study is that addiction to Heroin involves drug use, for which reason merely adding a

choice component to Woznicki's does not bring it into equivalency. We might speculate as to the effect Woznicki's and Heroin-use in combination might have on sentencing. Would mitigation fall part-way between the two extremes, or would the impact of one outweigh that of the other?

By varying not only the results of substance use, but also the circumstances preceding its first occurrence, we can begin to unpick the impact of perceived choice on determinations of blameworthiness in the case of addicted offenders by manipulating the context in which that choice was taken. In the following chapter, we will explore the effect of that context when it involves both addiction and mental illness by replicating and extending the present study paradigm, introducing additional aetiologies in which they are co-morbid. We will also examine in closer detail the importance of the timing of first drug-use using paired narratives in which first use occurred at either 15 or 20 years of age.

Chapter 3. Addiction and mixed aetiology:
How the sentencing of addicted offenders is affected by
the age of first drug use and disease co-morbidity.

Abstract

Our previous study illustrated the pivotal role of choice in addiction aetiology when determining criminal responsibility at sentencing. We wanted to explore the degree to which perceptions were altered by the age at which such choices were made, whilst also examining the impact of addiction and mental illness when presented in tandem. We therefore asked 277 Magistrates to consider a criminal sentencing scenario in which the defendant exhibited neurological impairment attributed to one of four origins: (i) disease; (ii) addiction; (iii) disease which led to addiction; (iv) addiction which led to disease. These four aetiologies were additionally varied with the information that they first manifested at either 15 or 20 years of age. Our findings indicate that, where drug use leads to addiction, leniency in respect of associated impairment is withheld. In contrast, identical impairment is a cue to leniency where the same drug use led to the development of a (fictional) disease. Unlike aetiological considerations, the age of initial drug-use (or disease) had minimal impact on sentencing decisions. Our results confirm the dramatic effect which the aetiology of impairment can have on judgments of criminal responsibility, whilst indicating areas in which this effect is less obviously in operation. Qualitative responses indicating the basis of sentencing decisions suggest that drug-use tips the balance in favour of punitive, rather than rehabilitative, principles.

That although the simple phrenzy occasioned immediately by drunkenness excuse not in criminals, yet if by one or more such practices an habitual or fixed phrenzy be caused though this madness was contracted by the vice and will of the party, yet this habitual and fixed phrenzy thereby caused puts the man into the same condition in relation to crimes, as if the same were contracted involuntarily at first.

Sir Matthew Hale
The History of the Pleas of the Crown (1678)

In the previous chapter we explored the effects of brain impairment on perceptions of criminal responsibility. We found, in the first instance, that identical impairment could attract different sentencing depending on its origin. Where brain damage was attributed to a fictional disease, the likelihood of receiving a reduction in the length of custodial sentence was significantly increased. In developing on this finding, we subsequently sought to isolate the distinction between addiction and our fictional disease by examining the impact of impairment origin, thereby demonstrating the pivotal role perceived choice played in determining the likelihood of mitigation.

Adding a voluntary initiation component to a non-drug-related disease model resulted in leniency being withheld, and we drew from this that reduced criminal responsibility in respect of altered brain-state is contradicted by perceptions of such a state having been voluntarily self-induced. Similarly, removing the voluntary initiation component from an addiction narrative resulted in greater leniency, even where that addiction was described as having been maintained for years since that time through the repeated self-administration of drugs. It was developed from this that personal responsibility for the choice to begin using drugs was of paramount significance in determining moral accountability for subsequent actions linked to further drug use. This broadly accords with the thinking outlined in the extensive legal literature on the matter of creating the circumstances of one's own defence (cf. Child, 2014; Robinson, 1985). In its simplest terms, an appeal to circumstance is a claim of misfortune, easily

contradicted by suggestion of contrivance in its construction. To claim some measure of diminished responsibility by virtue of impaired brain-state begs the question of its origin and the extent to which responsibility can be equivalently denied for its inception. In the case of the addicted offender, our findings to this point have suggested that perceptions of reduced criminal responsibility on account of brain impairment show potential to be blocked by understanding of a choice having been made in its acquisition.

The difficulty which presents itself in the example of the addicted offender, however, is that the initial choice to use drugs most frequently takes place in advance of adulthood. The majority of addicts in both the UK and the US report first using drugs below the age of 18 (Home Office, 2015; SAMHSA, 2014b). From this we may reasonably be led to consider what accommodation the law conventionally makes on account of youth. In the UK, the age of criminal responsibility is 10. Below this age, criminal liability cannot be attached to actions, whereas a 10-year-old offender may be held criminally responsible for their behaviour in common with adults.

Many commentators have queried the significant disparity between the age of criminal responsibility and the various markers of physical and mental maturity which are judged according to age (cf. Keating, 2007), and there is acknowledgement within the law of the need to accommodate the immaturity of younger offenders through differential procedures and sentencing practice. As Lord Diplock offered in *DPP v. Camplin* (1978): “to require old heads on young shoulders is inconsistent with the law's compassion of human infirmity” (at 717).

Juvenile offenders therefore occupy what might be termed a 'grey area' in terms of criminal responsibility. Whilst liable under the law, there is plainly an argument for comparatively lesser responsibility for action on the basis of their developmental immaturity. Impulsivity and a lack of self-control were understood as inherent characteristics of childhood long before brain-imaging techniques permitted examination of their associated neurodevelopmental trajectories. There is an extent to which such advances have merely lent credence to existing understanding of the often ill-considered and impetuous nature of youthful action through demonstration of its neural basis. Sentencing practice therefore conventionally strives to accommodate some measure of reduced blameworthiness for crimes committed in adolescence, but in the example of the addicted offender this is complicated by notions of diachronous responsibility. Where leniency in respect of impairment is denied on the basis of the

impairment having its origins in a temporally-distal rational choice, it is the blameworthiness for that earlier act which is 'imported' into consideration of the present offence. To ignore the timing of that act in relation to the developmental phase of the actor is to reject the idea of juvenile capacity for rational decision-making being only fractionally that of an adult.

Drawing on the impression that the initial choice to take drugs is a pivotal factor in determining the extent of criminal mitigation, it would follow that the circumstances of that choice would be influential in judgment. Making explicit the potentially mitigating nature of those circumstances should result in leniency being extended on their account. On this basis, the present study had two aims.

Firstly, if, as with the majority of addicts, first drug use occurs while still a juvenile (Home Office, 2015), then the choice which underlies it is made during a developmental phase on which account justice systems conventionally adopt more lenient sentencing practices. Whether viewed through the eyes of legal philosophy as a question of moral development, or from a psychological perspective as an absence of those neurodevelopmental factors associated with exercise of impulse control and behavioural regulation, account must be taken of developmental phase in determining the wrongness of action. There is no widely accepted theoretical framework in any academic field which deems acceptable that the consequences of choices made by children be held to the same account as those stemming from the choices made by mature adults (Keating, 2007; McDiarmid, 2013).

Secondly, we can explore the extent to which the perception of voluntariness in initial drug use can genuinely be the necessary and sufficient determinant of mitigation. We saw in the preceding chapter that Woznicki's disease could be rendered analogous to Heroin addiction through the introduction of a choice element in its initiation. Yet for choice in initiation to be the only factor differentiating addiction in that case makes little sense from either a psychological or a legal perspective. To suggest that drug-use subsequent to that initial choice is of no account would be to discount responsibility for it entirely, as one would if it were understood to be wholly involuntary.

From a neuroscientific perspective, this would mean suggesting that the kind of changes we see to brain structure and function in long-term drug users are manifested substantively in the earlier stages of use - a picture contradicted by evidence of staged plasticity resulting from repeated drug administration (Kalivas & O'Brien, 2008). From a

legal standpoint, denying the relevance of continued drug-use in maintenance of a habit is tantamount to a similar belief in the 'immediate' nature of the changes wrought by initial drug-use. For blame to be mediated *solely* by the actions of the rational actor who first chose to use drugs is to imply the subsequent irrationality of that actor. The only logic which allows for blame to attract to first drug-use whilst *entirely* precluding it for subsequent use is one which considers subsequent use to be *entirely* outside voluntary control.

By employing our fictional disease in combination with addiction, we can attenuate our initial narratives. In the previous chapter, when we confounded expectations surrounding either addiction or our analogous fictional disease, it was possible to modify judgments of blameworthiness and demonstrate that leniency in respect of mental impairment was reduced when the source of that impairment was offered as addiction. Here, we can bring into question the volitional nature of initial drug-use by suggesting that it was preceded by Woznicki's. Offering one symptom of our fictional disease as progressively impaired behavioural control poses questions about the volitional nature of the drug-use which followed. The capacity to withhold action and to suppress strong desires are intrinsic characteristics of the rational actor who bears culpability for their actions. In their absence, there may still be a choice made, but it is more difficult to conceive of it as an entirely free one. By offering the possibility of a hitherto unconsidered causal factor in heroin-use we can refocus attention to the context of that perceived choice as one in which behavioural control was already impaired.

Additionally, a fourth narrative offering that Woznicki's had developed as a result of habitual Heroin-use provides an extremely close analogy to a normative understanding of addiction; a brain disease, characterized by behavioural impairment, cultivated through repeated drug use. These two additional narratives were included alongside two conditions replicating our original paradigm: an unconfounded Heroin addiction narrative and one in which Woznicki's was presented in the absence of any drug history or involvement (see Figure 3.1 on page 65).

Each of these four groups was mirrored, such that the age at which first drug use or disease occurred was presented as either 15 or 20 years of age. If choice in the matter of initial drug-use plays a pivotal role in sentencing decisions, and on legal grounds choice is viewed as compromised during earlier developmental stages, then choice in drug-use initiation having been at such an earlier stage should be seen as grounds for leniency.

We therefore hypothesized that greater leniency would be expressed in sentencing where the initial choice to use drugs was made at 15 years of age, rather than 20. We also anticipated that, as in the previous study, leniency would be forthcoming for the Woznicki's sufferer and blocked in the case of the addict with identical impairment, whilst the mixed aetiologies, in which disease only partially replaced potentially blameworthy aspects of the addiction cycle, would attract leniency part-way between these two extremes.

Method

Participants. A total of 277 active and retired Magistrates took part in this survey, which was accessible via a link on the Magistrates' Association members' website and distributed through their members' bulletin. One survey was incomplete, leaving 276 submitted responses which were eligible for inclusion in the analysis (131 Male, 137 Female, 8 withheld)⁵. Broadly in line with national figures, the majority (60.2%) of Magistrates participating in this study were between 61 and 70 years of age⁶. Some participants were excluded from portions of the analysis for reasons given below.

This study was conducted in accordance with the British Psychological Society's Code of Ethics and Conduct. Informed consent was collected in advance and all respondents were debriefed and given the opportunity to withdraw their responses following participation. The study protocol was approved by the Research Ethics Committee of the University of Sussex.

Design. This was a mixed 2 (Age) by 4 (Aetiology) design. The Age conditions varied the age at which first drug-use or initial disease acquisition was given as having taken place (15 or 20 years old). The Aetiology conditions mirrored those of our initial Woznicki's/Heroin paradigm alongside two additional aetiology narratives: one in which Heroin-use had resulted in Woznicki's disease and another in which Woznicki's disease had been followed by Heroin-use. In both instances, the mental impairment upon which mitigation was predicated was attributed to the most recent factor in the chronology. This gave four Aetiology conditions:

⁵ Following the study presented in Chapter 2, the Magistrates' Association extended the opportunity to collect limited demographic information from those members who chose to participate in subsequent studies.

⁶ 70 is the mandatory retirement age for Magistrates sitting in England and Wales.

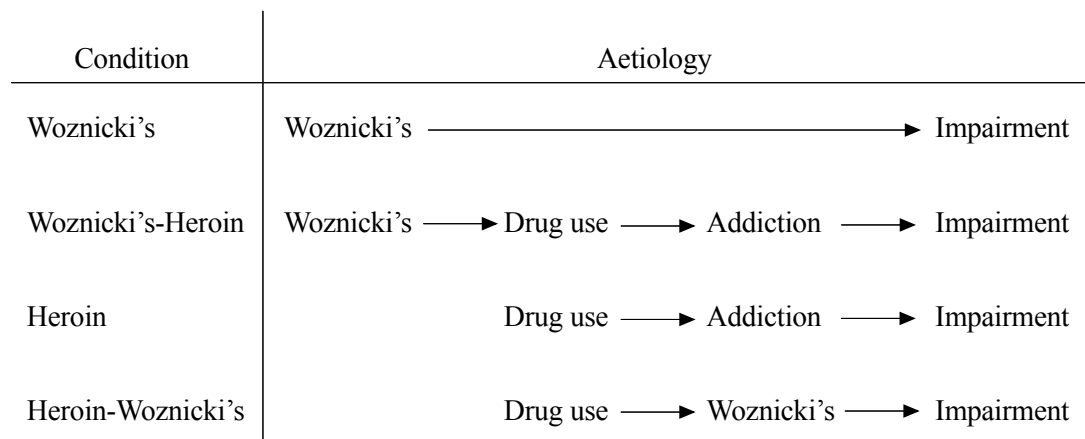


Figure 3.1 - Staged replacement of addiction cycle components across four Aetiology conditions.

Procedure. The survey was hosted on the Qualtrics platform (Qualtrics, Provo, UT) and accessible via url. All participants were informed that they would initially be presented with details of a fictional offence and asked to decide on an appropriate sentence for the offender. The scenario was as follows:

David is a young man with no previous convictions. He was waiting for a train at his local station when he noticed an elderly woman who had a significant amount of money in her purse, which she had placed beside her on a bench. David snatched the purse and ran.

Transport police located him on CCTV and apprehended him shortly afterwards. He was no longer in possession of the purse, but did have a substantial sum of money in his possession. David pleaded 'not guilty' to the charge of Theft (Theft Act 1968, s. 1).

David has now been found guilty at trial, with the following factors contributing to the seriousness:

- vulnerable victim;
- large sum of money (approximately £1000);
- victim suffered emotional shock and distress;
- victim now too afraid to travel independently.

Respondents were instructed that current sentencing guidelines would suggest a custodial sentence of between 12 and 26 weeks. All participants were then asked to indicate, on a sliding scale of 1 to 26 weeks, how many weeks' custody they would consider appropriate, given the facts of the case. Having decided on this initial 'anchor' sentence, they were subsequently presented with additional information on potentially mitigating or aggravating features. The first section of this additional information was identical for all participants:

From the evidence you heard at trial, you are satisfied that the following is true:

David suffers from damage to his prefrontal cortex, an area of the brain involved in action inhibition. Damage to this area has been demonstrated to result in impulsive behaviour and a lack of self-control.

David's neurological condition was directly causal to his commission of the crime. David has a history of increasingly impulsive behaviour, although this is the first occasion on which it has resulted in the involvement of the criminal justice system.

Those in each of the eight conditions then received variations on the origin of the defendant's pathophysiological profile, dependent on the aetiology of the outlined impairment and the age at which it first occurred (see Table 3.1).

Table 3.1 - Aggravating or mitigating circumstances presented across Age and Aetiology conditions.

Aetiology	Additional information
Woznicki's	Six years ago, when David was [15/20] years old, he developed a rare neurological disease called Woznicki's syndrome, a degenerative disorder associated with progressively impaired behavioural control. The damage to his prefrontal cortex has resulted from Woznicki's syndrome.
Woznicki's-Heroin	Six years ago, when David was [15/20] years old, he developed a rare neurological disease called Woznicki's syndrome, a degenerative disorder associated with progressively impaired behavioural control. In the wake of this diagnosis, David began taking Heroin. The damage to his prefrontal cortex has resulted from addiction to Heroin.
Heroin	Six years ago, when David was [15/20] years old, he began taking Heroin. The damage to his prefrontal cortex has resulted from addiction to Heroin.
Heroin-Woznicki's	Six years ago, when David was [15/20] years old, he began taking Heroin. As a result of this, he developed a rare neurological disease called Woznicki's syndrome, a degenerative disorder associated with progressively impaired behavioural control. The damage to his prefrontal cortex has resulted from Woznicki's syndrome.

Participants were then invited to adjust their original sentence, within the same bounds of 1 to 26 weeks' custody, in light of this additional information. Once participants had chosen to increase, decrease or leave unchanged their original sentence, several follow-up questions were presented in order to probe the underlying rationale for

the decision. Firstly, respondents were explicitly requested to provide the reasoning behind their decision in the form of a free-text response. Secondly, they were presented with the five principles of justice as laid out in the Criminal Justice Act 2003 (see Appendix A on page 167) and asked to select those which were at the forefront of their consideration in making their determination. If more than one principle was selected, participants were then asked to rank them in order of relevance to their deliberation. Thirdly, all respondents were asked to indicate on a sliding scale how likely they thought it was that David would go on to commit further crimes in future.

Finally, all respondents were given the option of suspending David's custodial sentence in favour of a community order, with a view to facilitating his attending a residential treatment facility. Those who chose to suspend David's sentence were asked to indicate for how long they felt his suspended sentence should last, on a sliding scale between 1 and 24 months.

Measures and analyses. One participant submitted an incomplete response and this was omitted from the analysis. As the maximum possible reduction in sentence was 96%,⁷ whereas the maximum possible increase in sentence was 2500%,⁸ a decision-rule was implemented to ensure that no undue weighting occurred when analyzing results in percentages terms. In common with the study presented in Chapter 2, it was determined in advance that any respondents increasing their initial sentence by more than 300% at the adjustment stage would be excluded from such analysis. Six participants met this criterion ($n=6$, $M=1600\%$, $SD=874\%$) and these responses were therefore excluded from analysis in percentage terms. Seven respondents opted for the minimum possible (one week) sentence at the initial sentencing phase, precluding the possibility of reducing their sentence on subsequent presentation of additional factors. These response sets were therefore excluded from odds ratio analyses of sentence reduction. For these reasons the number of participants in each condition varied in line with analytical approach.

The study presented in the preceding chapter gave strong suggestion that differences in mean percentage change in sentence between groups could be driven almost entirely by the frequency of reduction, rather than its extent. For this reason, results were

⁷ 25 weeks off an initial 26-week sentence.

⁸ 1 week increasing to 26 weeks.

analyzed both in terms of percentage change in initial sentence and as the odds of receiving a changed sentence. Both of these approaches were augmented with the calculation of Bayes Factors, employing prior probability distributions derived from the results of the previous study. Details of the distributions employed can be found in Appendix H on page 183.

Following the adjustment phase of custodial sentencing, participants were additionally asked to provide the reasons for their final decision in the form of free-text responses. These responses were coded for statistical and thematic analysis. Statistical measures were not calculated where, due to small sample sizes, power analyses indicated only a marginal possibility of detecting even a large effect.

Results

We were interested in examining how the aetiology of a potentially mitigating factor (disease, addiction, or a combination of the two) affected sentencing decisions. To this end, we asked Magistrates to consider a criminal sentencing scenario. Using a 2 (Age) x 4 (Aetiology) design, Magistrates were provided with additional information which varied the aetiology of impairment and the age at which it began.

At the initial sentencing phase, Magistrates used the full range of sentences available to them. Mean initial sentence was 18.1 weeks ($SD=6.6$, $N=276$).

We sought to determine the impact of Age and Aetiology on percentage change in sentence, and moreover the extent to which these independent variables might interact in mediating leniency. In the Age conditions, the data were not normally distributed [Age 15 $D(135)=0.23$, $p<.001$; Age 20 $D(135)=0.29$, $p<.001$] and exhibited heterogeneity of variance [$F(1,268)=2.9$, $p<.001$]. Similarly, in the Aetiology conditions the data were not normally distributed [Heroin $D(69)=0.40$, $p<.001$; Heroin-Woznicki's $D(67)=0.24$, $p<.001$; Woznicki's $D(67)=0.13$, $p<.001$; Woznicki's-Heroin $D(67)=0.26$, $p<.001$] and exhibited heterogeneity of variance [$F(3,266)=5.4$, $p=.001$]. However, there are no robust non-parametric tests for interaction effects and parametric tests will nonetheless yield robust results when, as in the present study, sample sizes exceed 30 participants per condition (Glass, Peckham, & Sanders, 1972 ; Lumley, Diehr, Emerson, & Chen, 2002). For these reasons, a parametric approach was adopted in the first instance, after which non-parametric methods were employed to test for specific group contrasts.

A 2-way independent ANOVA indicated a significant main effect of Aetiology on percentage sentence reduction outcome [$F(3,262)=11.9, p<.001$] and a non-significant main effect of Age [$F(1,262)=0.02, p=.90$]. Additionally, there was a non-significant interaction effect between Age and Aetiology [$F(3,262)=0.82, p=.49$] (see Figure 3.2).

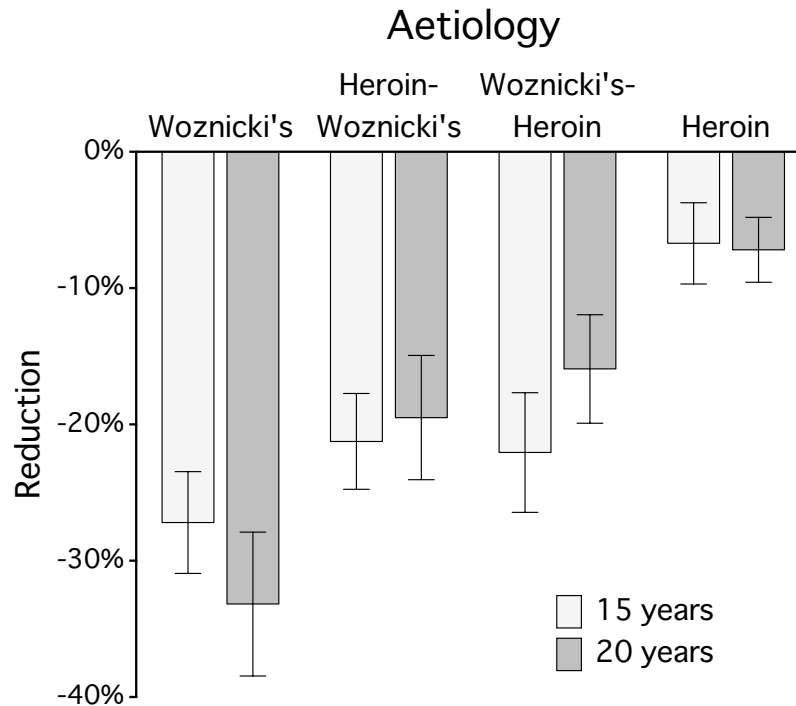


Figure 3.2 - Mean percentage sentence reduction by Aetiology and Age ($N=270$; error bars ± 1 SEM).

Age of initiation. In order to determine the impact of age of initiation of drug use on leniency in sentencing, both the extent and frequency of sentence alteration were compared across Age conditions. Results were calculated in terms of the odds of receiving a change in sentence, percentage change in sentence and length of final sentence.

There was no significant effect of Age on mean percentage sentence reduction in any of the four Aetiology conditions (see Table 3.2).

Table 3.2 - Mean percentage sentence reduction across Age and Aetiology conditions ($N=270$).

Aetiology	Age 15		Age 20		U	z	p
	%	SD	%	SD			
Heroin	6.7	(17.4)	7.2	(14.1)	579.5	-0.23	<i>ns</i>
Heroin-Woznicki's	21.3	(20.5)	19.5	(26.2)	496.5	-0.84	<i>ns</i>
Woznicki's	27.2	(21.8)	33.2	(30.3)	503.5	-0.73	<i>ns</i>
Woznicki's-Heroin	22.1	(25.2)	15.9	(23.2)	471.0	-1.2	<i>ns</i>

In order to assess the impact of Age on the likelihood of receiving a reduction in sentence, odds ratios of frequency of reduction as a function of Age were calculated in each of the four Aetiology conditions. Although it was possible to discern a slight tendency towards more frequent reduction in the Age 15 variants of each Aetiology condition, in no instance did this effect achieve statistical significance. There was no indication that the likelihood of receiving a reduction in sentence varied significantly as a function of age of initial drug use (see Figure 3.3).

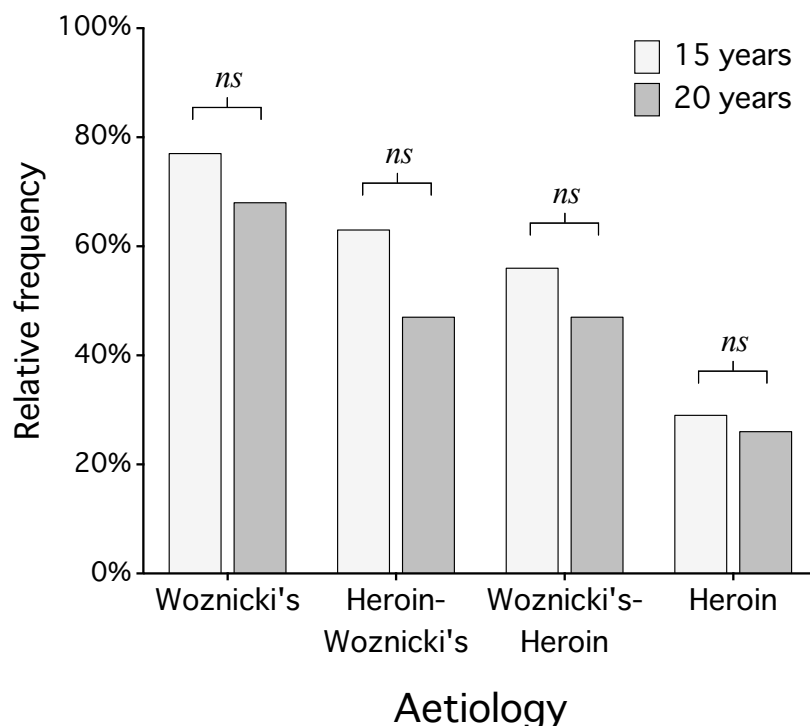


Figure 3.3 - Relative frequency of sentence reduction across Age and Aetiology conditions.

Across all four Aetiology conditions, Bayes Factors fell within the range of 0.5 to 1.5, indicating that the data were insensitive and no conclusions could be drawn regarding

the impact, if any, of Age on the likelihood of receiving a reduction in custodial sentence (see Table 3.3).

Table 3.3 - Odds ratio comparisons of Age across Aetiology conditions.

	Odds Ratio	χ^2	p	Bayes Factor
Heroin	1.2	0.07	<i>ns</i>	0.51
Heroin-Woznicki's	1.9	1.74	<i>ns</i>	1.43
Woznicki's	1.6	0.78	<i>ns</i>	0.92
Woznicki's-Heroin	1.4	0.53	<i>ns</i>	0.72

Likewise, there was no indication that age of initiation played a role in determining the length of custodial sentence imposed in the final instance, with no significant difference emerging along this dimension in any of the four Aetiology conditions (see Table 3.4).

Table 3.4 - Effect of Age of initiation on mean final sentence in weeks by Age and Aetiology.

	Age 15			Age 20			U	z	p
	n	Final sentence	SD	n	Final sentence	SD			
Heroin	35	17.4	(6.4)	35	18.2	(6.7)	563.0	-0.59	<i>ns</i>
Heroin-Woznicki's	35	14.3	(5.5)	34	14.1	(6.5)	558.5	-0.44	<i>ns</i>
Woznicki's	35	13.8	(6.7)	34	11.7	(6.7)	493.5	-1.23	<i>ns</i>
Woznicki's-Heroin	34	14.5	(6.9)	34	15.5	(6.6)	533.5	-0.55	<i>ns</i>

Aetiology. In the absence of suggestion that age of initiation impacted sentencing decisions, analyses were collapsed across this variable where appropriate. Results across Aetiology conditions were not normally distributed and exhibited inequality of variance, so non-parametric methods were employed for subsequent analyses. A Kruskal-Wallis test indicated a significant effect of Aetiology on mean percentage sentence reduction [$H(3)=34.6, p<.001$] (see Figure 3.4). Mann-Whitney tests were used to follow up this finding, employing the Holm-Bonferroni method to control for multiple comparisons.

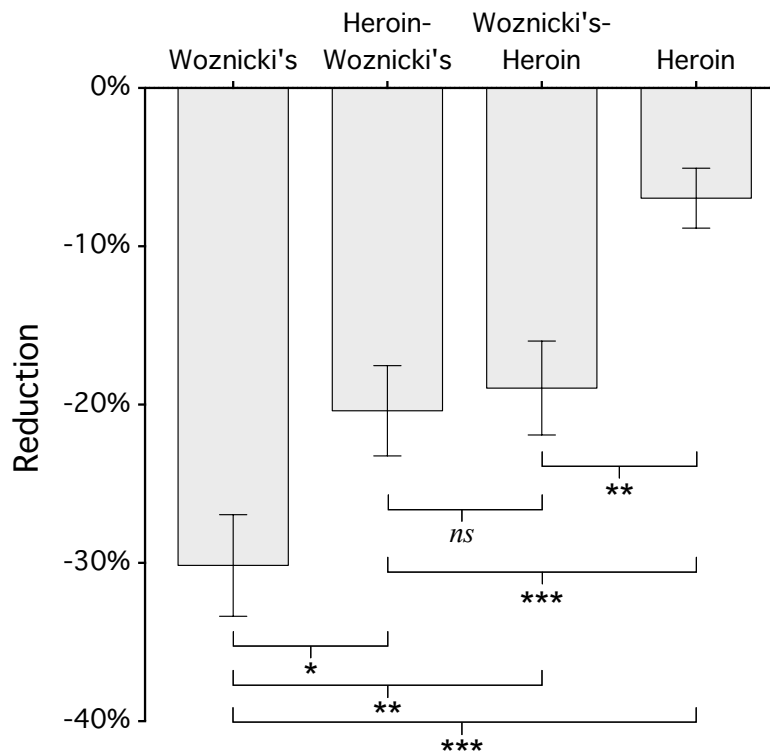


Figure 3.4 - Mean reduction in sentence across 4 aetiology conditions ($N=270$; error bars ± 1 SEM; * $p<.05$, ** $p<.01$, *** $p<.001$).

Heroin contrasts.

Heroin v. Woznicki's. Mean percentage sentence reduction was significantly greater [$U=1055$, $z=-5.80$, $p<.001$ (two-tailed test), $r=1.14$, power=1.0, $B_{N(10.28, 5.14)}=1.8 \times 10^7$] in the Woznicki's condition [$n=67$, $M=30.2$, $Mdn=28.6$] than in the Heroin condition [$n=69$, $M=7.0$, $Mdn=0$].

Heroin v. Heroin-Woznicki's. Mean percentage sentence reduction was significantly greater [$U=1547$, $z=-3.68$, $p<.001$ (two-tailed test), $r=0.68$, power=.97, $B_{N(11.6, 5.8)}=1.1 \times 10^3$] in the Heroin-Woznicki's condition [$n=67$, $M=20.4$, $Mdn=14.3$] than in the Heroin condition [$n=69$, $M=7.0$, $Mdn=0$].

Heroin v. Woznicki's-Heroin. Mean percentage sentence reduction was significantly greater [$U=1689$, $z=-3.02$, $p=.003$ (two-tailed test), $r=0.59$, power=0.91, $B_{N(11.6, 5.8)}=1.8 \times 10^2$] in the Woznicki's-Heroin condition [$n=67$, $M=19.0$, $Mdn=16.7$] than in the Heroin condition [$n=69$, $M=7.0$, $Mdn=0$].

Woznicki's contrasts.

Woznicki's v. Heroin-Woznicki's. Mean percentage sentence reduction was significantly greater [$U=1745$, $z=-2.27$, $p=.02$ (two-tailed test), $r=0.39$, power=.60, $B_{N(11.6, 5.8)}=7.7$] in the Woznicki's condition [$n=67$, $M=30.2$, $Mdn=28.6$] than in the Heroin-Woznicki's condition [$n=67$, $M=20.4$, $Mdn=14.3$].

Woznicki's v. Woznicki's-Heroin. Mean percentage sentence reduction was significantly greater [$U=1604$, $z=-2.92$, $p=.004$ (two-tailed test), $r=0.44$, power=0.70, $B_{N(11.6, 5.8)}=16.0$] in the Woznicki's condition [$n=67$, $M=30.2$, $Mdn=28.6$] than in the Woznicki's-Heroin condition [$n=67$, $M=19.0$, $Mdn=16.7$].

Mixed contrast.

Woznicki's-Heroin v. Heroin-Woznicki's. There was a nonsignificant difference [$U=2108$, $z=-0.64$, $p=.52$ (two-tailed test), $r=0.06$, power=.06, $B_{N(11.6, 5.8)}=0.2$] in mean percentage sentence reduction between the Woznicki's-Heroin condition [$n=67$, $M=19.0$, $Mdn=16.7$] and the Heroin-Woznicki's condition [$n=67$, $M=20.4$, $Mdn=14.3$].

Odds of sentence reduction. In a direct replication of the Heroin vs. Woznicki's contrast in the previous chapter, differences in the leniency extended by Magistrates in the form of sentence reduction derived almost entirely from differences in the likelihood of sentence reduction, rather than variation in its extent. Magistrates informed that David's neurological impairment stemmed from Woznicki's were more than seven times as likely to reduce the custodial sentence given than they were when informed that those identical impairments had result from the use of and addiction to Heroin [OR=7.7, $X^2=30.2$, 95%CI=3.6-16.6, $p<.001$, $B_{H(0, 1.16)}=1.6 \times 10^5$] (see Figure 3.5).

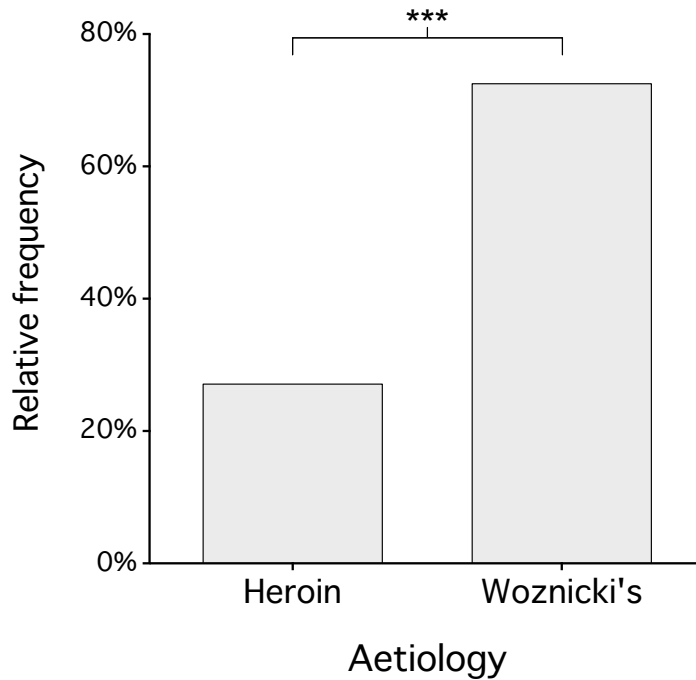


Figure 3.5 - Relative frequency of sentence reduction in Heroin and Woznicki's aetiologies (** $p < .001$).

Participants in the Woznicki's-Heroin condition ($n=67$) were almost three times as likely to reduce their original sentence [$OR=2.9$, $X^2=8.7$, $95\%CI=1.4-6.0$, $p=.003$, $B_{H(0, 1.16)}=21.3$] than those in the Heroin condition ($n=69$). Similarly, the odds of the sentence being reduced in the Heroin-Woznicki's condition ($n=66$) were over three times greater [$OR=3.6$, $X^2=12.5$, $95\%CI=1.7-7.6$, $p<.001$, $B_{H(0, 1.16)}=83.1$] than in the Heroin condition ($n=69$).

At the same time, odds of receiving a reduction in sentence in the Woznicki's condition ($n=67$) were more than double [$OR=2.2$, $X^2=4.3$, $95\%CI=1.0-4.5$, $p=.04$, $B_{H(0, 1.16)}=4.1$] those in the Heroin-Woznicki's condition ($n=66$), and two-and-a-half times higher [$OR=2.7$, $X^2=7.2$, $95\%CI=1.3-5.6$, $p=.007$, $B_{H(0, 1.16)}=15.0$] than in the Woznicki's-Heroin condition ($n=67$).

The odds of receiving a reduction in sentence in the Woznicki's-Heroin condition ($n=67$) and the Heroin-Woznicki's condition ($n=66$) were broadly equivalent [$OR=0.8$, $X^2=0.4$, $95\%CI=0.4-1.6$, $p=.54$, $B_{H(0, 1.16)}=0.19$], whilst the calculated Bayes Factor of 0.19 provides substantial evidence against the suggestion of dissimilarity. These findings are presented in Table 3.5.

Table 3.5 - Odds ratio matrix of likelihood of sentence reduction across 4 Aetiology conditions (* $p < .05$, ** $p < .01$, *** $p < .001$).

	Heroin	Heroin- Woznicki's	Woznicki's	Woznicki's- Heroin
Heroin	-	0.3***	0.1***	0.3**
Heroin- Woznicki's	3.6***	-	0.5*	1.2
Woznicki's	7.7***	2.2*	-	2.7**
Woznicki's- Heroin	2.9**	0.8	0.4**	-

However, it is not true to say that those who opted to reduce their sentence did so in equal terms across all conditions. Isolating just those participants who chose to reduce the sentence they had given revealed some variation in the degree to which their leniency extended (see Figure 3.6).

The data in the Heroin group were normally distributed [$D(19)=0.17$, ns], but the data in the Woznicki's condition were not [$D(50)=0.18$, $p < .05$]. A Levene's test confirmed inhomogeneity of variance across the two groups [$F(1,67)=6.97$, $p < .05$]. A direct contrast between the Heroin and Woznicki's conditions showed a statistically significant difference in the extent of reduction in sentence. Mean percentage sentence reduction in the Woznicki's condition [$n=50$, $M=40.4$, $Mdn=33.3$] was greater [$U=324$, $z=-2.03$, $p=.04$ (two-tailed test), $r=0.68$, $power=.68$] than that in the Heroin condition [$n=19$, $M=28.6$, $Mdn=25.0$].

This deviates slightly from earlier impressions indicating frequency as the sole driver of the difference and presents a somewhat muted (though still apparent) echo of the pattern seen in relative frequency of change. In simple terms, the greater the likelihood of sentence reduction, seemingly the greater the extent of that leniency should it be forthcoming.

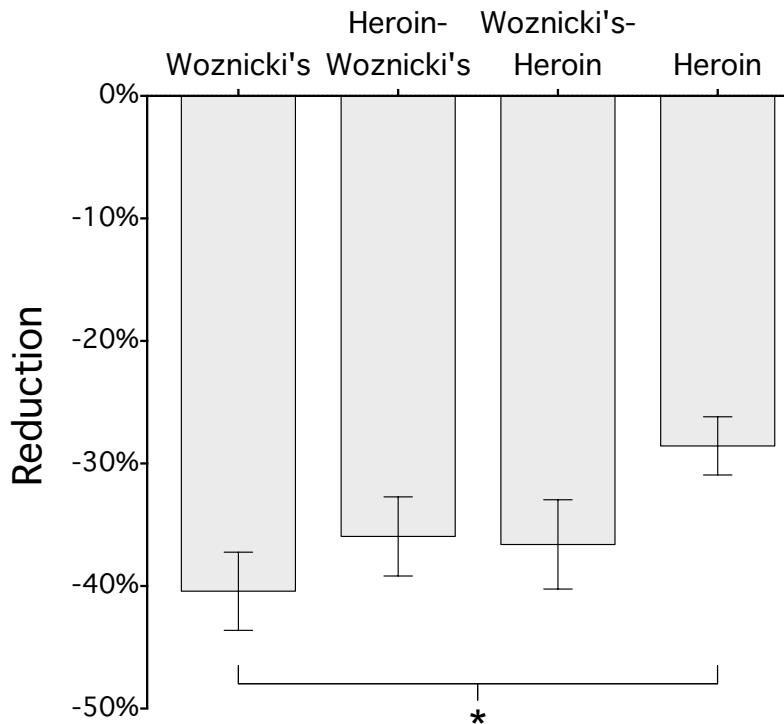


Figure 3.6 - Mean percentage sentence reduction (reducers only; $n=142$) across Aetiology conditions (error bars ± 1 SEM; * $p<.05$).

In considering the likelihood of receiving a reduction in sentence, leniency extended in the Heroin-Woznicki's and the Woznicki's-Heroin conditions appears to occupy a 'middle-ground' between the two extremes of the Woznicki's and Heroin conditions. This is true both in terms of the likelihood of receiving a reduction in sentence and also, to a lesser extent, the proportion by which the sentence is reduced should that occur. In tandem, these two factors contributed to significant variation in the length of the custodial sentence decided upon in the final instance in respect of identical crimes (see Figure 3.7). Defendants in the Heroin condition received the highest mean final sentence ($M=17.7$ weeks, $SD=6.5$) and those in the Woznicki's condition the lowest ($M=12.9$ weeks, $SD=6.8$). Mean final sentence in the two mixed aetiologies fell roughly midway between these two extremes, with defendants in the Woznicki's-Heroin condition receiving slightly longer sentences ($M=14.8$ weeks, $SD=6.6$) than those in the Heroin-Woznicki's condition ($M=14.2$ weeks, $SD=5.9$).

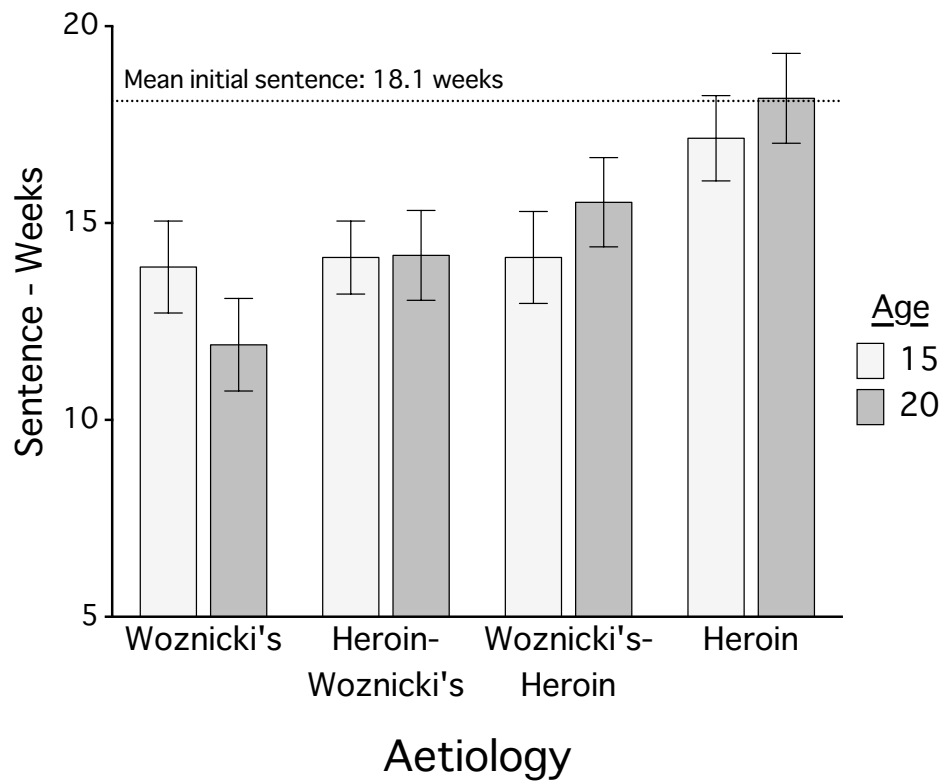


Figure 3.7 - Mean final sentence by Age and Aetiology (error bars ± 1 SEM).

Principles. The principle of justice cited most frequently as having been at the forefront of consideration in deciding the appropriate sentence was Protection of the Public (see Table 3.6). This was in keeping with findings on the general ranked importance of the five principles presented in Appendix A (see page 167).

Table 3.6 - Frequency with which the five principles were cited as at the forefront of consideration in sentencing decisions ($N=276$).

Principle	<i>n</i>	%
Protection	246	89.1
Punishment	236	85.5
Reduction	178	64.5
Rehabilitation	141	51.1
Reparation	98	35.5

Only 4% of respondents ($n=12$) stated that only one of the five principles was at the forefront of their consideration when making their decision (6 Punishment, 4 Protection, 2 Rehabilitation). The remaining 96% of respondents ($n=264$) offered two or more principles and were subsequently asked to rank them in order of relevance. If fewer than four principles were selected, those omitted were imputed through equiprobability

coding (see Appendix D on page 178 for full details of this procedure). Rankings were then converted into weighted scores following the same procedure as outlined in Appendix A (see page 167) for direct comparison with the scores calculated there.

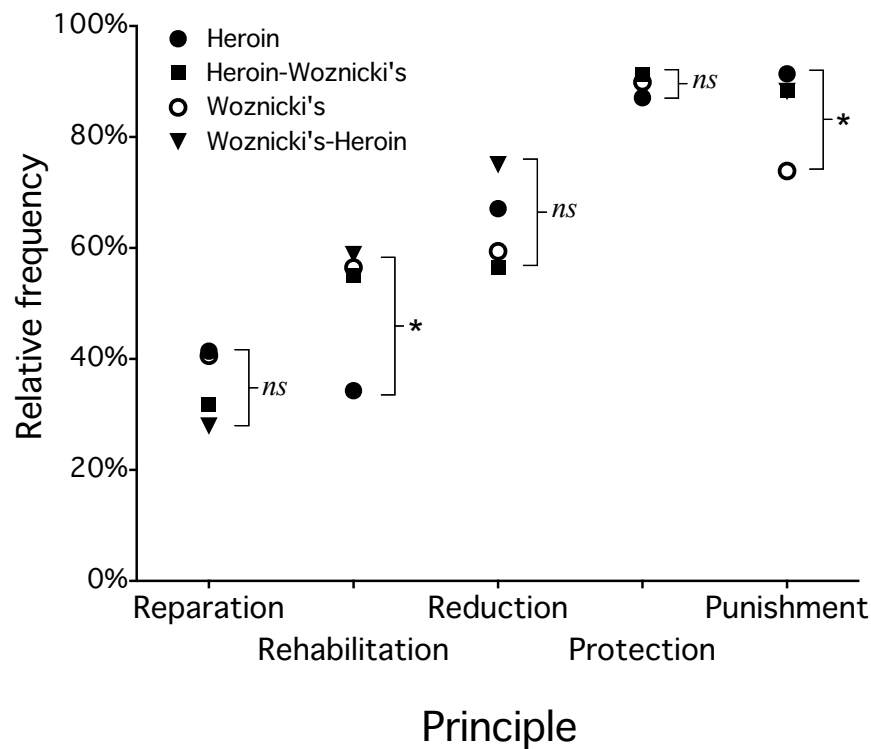


Figure 3.8 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Aetiology conditions (* $p < .05$).

There was some variability in the frequency with which the principles were cited across Aetiology conditions (see Figure 3.8). Specifically, participants in the Heroin Aetiology condition offered Rehabilitation as having been a factor at the forefront of their consideration significantly less frequently than participants in the other three conditions [$X^2 = 10.8$, $p = .01$] (see Figure 3.9).

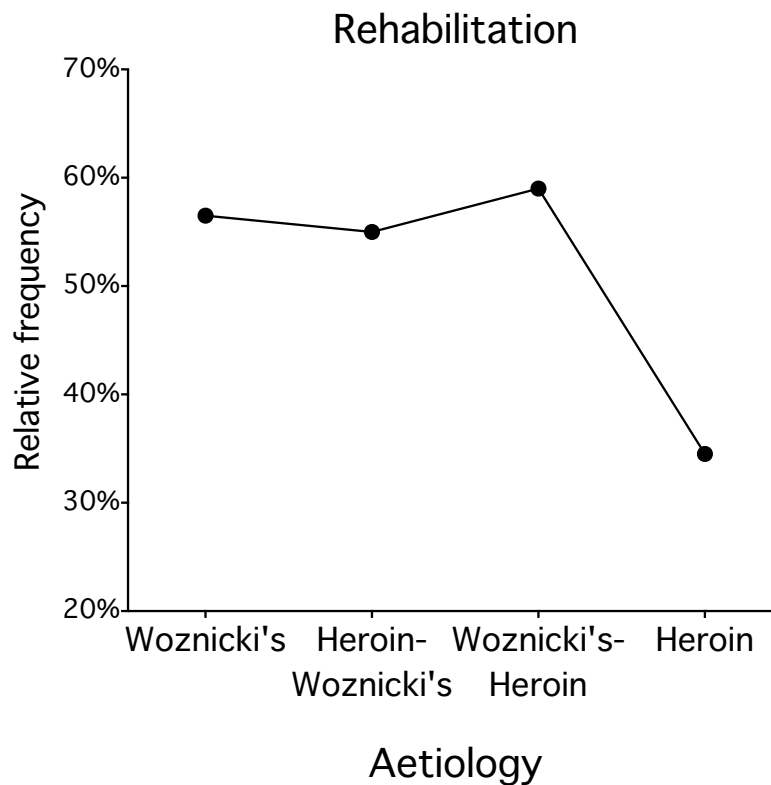


Figure 3.9 - Relative frequency of Rehabilitation being cited as a factor in sentencing decisions across four Aetiology conditions.

The frequency with which rehabilitation was cited as factor in sentencing was significantly lower in the Heroin Aetiology condition. In the other three conditions, Rehabilitation is cited more frequently (56.8%) than Reparation (33.5%). Yet, in the Heroin condition, Rehabilitation is cited in only 34.3% of instances, versus 41% citing Reparation (see Figure 3.8). This seemingly altered perception of the relevance of rehabilitation as a factor in sentencing decisions cannot be attributed to the presence of drug involvement in the narrative, as similar involvement is outlined in three of the four conditions. It would appear, rather, to be a function of the absence of Woznicki's.

At the same time, the absence of drug-use in the impairment narrative presented in the Woznicki's condition was associated with a lower frequency of Punishment being cited as a factor [$X^2=10.3$, $p=.02$] (see Figure 3.10).

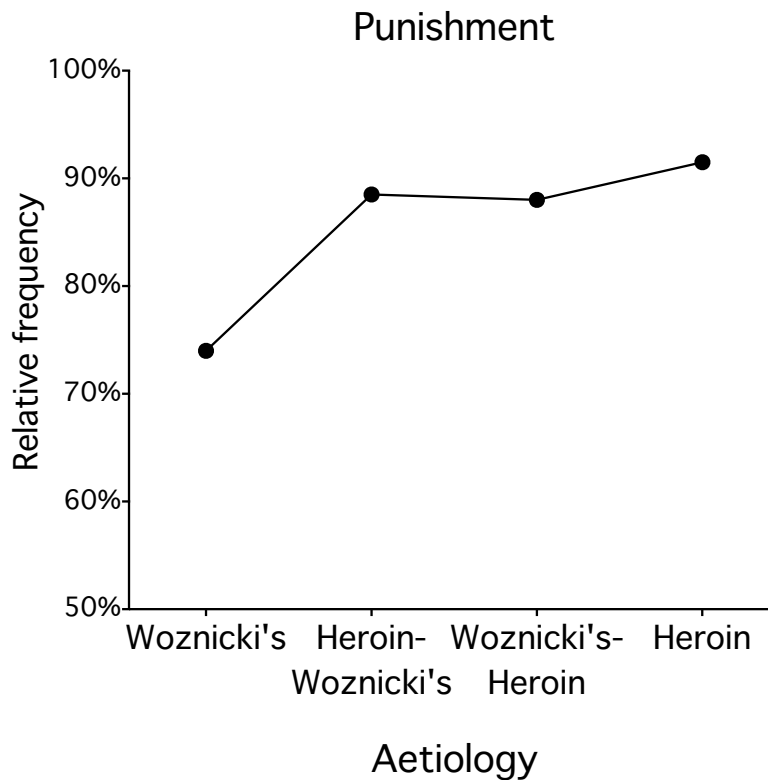


Figure 3.10 - Relative frequency of Punishment being cited as a factor in sentencing decisions across four Aetiology conditions.

Rank scores were calculated for the relative importance of the five principles, allowing the relative weight attributed to each to be contrasted both between conditions and with the scores derived in Appendix A in relation to general sentencing practice (see page 167). The sharpest deviations from the importance of the principles as expressed in general sentencing practice were in Punishment and Rehabilitation. Rehabilitation was ranked comparatively lower in importance, whilst Punishment was a full point higher, placing it second only to Protection in relative importance when considering sentencing decisions (see Table 3.7).

Table 3.7 - Difference in relative importance of the five principles in the present scenario and general sentencing.

Principle	General Sentencing	Present Study	Difference
Protection	3.6	4.0	+ 0.4
Rehabilitation	3.2	2.6	- 0.6
Reduction	3.0	2.7	- 0.3
Punishment	2.6	3.6	+ 1.0
Reparation	2.5	2.2	- 0.3

Reoffending estimate. In order to examine the extent to which perceptions of future dangerousness impacted sentencing decisions, comparisons were conducted of the estimated probability that David would reoffend upon release. Estimated probability of future reoffending did not vary significantly by Aetiology, with respondents across all conditions offering an average estimate of the likelihood that David would commit further crimes in future in the region of 60-70% (see Table 3.8).

Table 3.8 - Estimated probability of future reoffending across Age and Aetiology conditions.

	Age 15			Age 20		
	<i>n</i>	Estimate (%)	SD	<i>n</i>	Estimate (%)	SD
Heroin	35	65.1	(18.5)	35	66.4	(17.1)
Heroin-Woznicki's	35	65.6	(17.8)	34	68.2	(20.1)
Woznicki's	35	65.1	(16.5)	34	63.2	(21.6)
Woznicki's-Heroin	34	61.4	(19.0)	34	64.9	(22.1)

There was similarly little to indicate that estimated probability of reoffending varied according to age of initiation (see Table 3.9).

Table 3.9 - Estimated probability of future reoffending by Age.

Age	<i>n</i>	Reoffending estimate (%)	SD
15	139	64.3	(17.8)
20	137	65.7	(20.2)

Those respondents who had opted to reduce the length of David's custodial sentence on learning of his impairment offered slightly more optimistic opinions on the likelihood of his reoffending [$M=61.4\%$, $SD=19.9$, $n=142$] than those who did not feel that a reduction in sentence was merited [$M=68.8\%$, $SD=17.3$, $n=134$]. A similarly minimal difference was observable in the estimates offered by participants who were subsequently willing to suspend David's custodial sentence in favour of a community order [$M=64.1\%$, $SD=18.2$, $n=232$] and those who preferred to leave the custodial sentence in place [$M=70.8\%$, $SD=21.3$, $n=43$].

Pearson product-moment correlation coefficients were computed to assess the relationship between estimated probability of future re-offending and length of either custodial sentence or community order. Length of final sentence was positively correlated with estimated probability of reoffending [$N=276$; $r=0.354$, $p<.001$]. Amongst those participants willing to see the custodial sentence suspended in favour of a community order ($n=232$), there was a weak but significant positive correlation between the length of that community order and estimated probability of reoffending [$r=0.189$, $p=.004$]. Amongst those who chose not to suspend the custodial sentence ($n=43$), a greater positive correlation was observed between the length of final sentence and estimated probability of reoffending [$r=0.534$, $p<.001$].

Thematic analysis. In order to investigate the decision-making process Magistrates followed in our hypothetical case, all respondents were asked to add a brief rationale for their sentencing decision. Selected examples of themes emerging from these responses are presented in Table 3.10 on page 83. Responses were coded for statistical and thematic analysis, revealing the factors which most frequently emerged as having underpinned sentencing decisions and their mitigating or aggravating nature.

Table 3.10 - Selected examples of factors offered by Magistrates as considerations in sentencing decisions.

Response	Condition	Sentence change
Medical condition		
"there are relevant medical reasons. his medical condition is not related to drugs/alcohol"	Woznicki's	26 weeks reducing to 18
"Medical mitigation given."	Woznicki's	26 weeks reducing to 24
"Medical incapacity"	Woznicki's	8 weeks reducing to 4
"Medical condition influencing actions"	Woznicki's	26 weeks reducing to 20
"His medical condition would indicate that he is not fully culpable"	Woznicki's	16 weeks reducing to 12
"He is not entirely responsible for his actions because of a medical condition."	Woznicki's	24 weeks reducing to 18
Problems self-induced		
"David intentionally took drugs, this has caused him to lose his inhibitions. He should not now use his decision as an excuse."	Heroin	26 weeks unchanged.
"His problems are self-induced"	Heroin-Woznicki's	20 weeks reducing to 16
Absence of choice		
"medical condition (not self induced ie drugs/alcohol) that directly accounted for behavior"	Woznicki's	18 weeks reducing to 12
"Medical reasons have explained his reasons, these are not self induced."	Woznicki's	24 weeks reducing to 12
"David's problems are not of his own choosing and that makes him a more sympathetic defendant."	Woznicki's	18 weeks reducing to 12
"Health condition not of his making"	Woznicki's	22 weeks reducing to 16
"David's disease has deteriorated to cause his behaviour. It was not self inflicted, so has little control over his actions"	Woznicki's	20 weeks reducing to 18
Medical legitimacy		
"there is a reason for his committing the crime that is a medical condition"	Heroin-Woznicki's	24 weeks reducing to 16
"medical condition is mitigating factor"	Heroin-Woznicki's	26 weeks reducing to 18
"He has been diagnosed with a degenerative condition that affects his behavior which somewhat mitigates his culpability for the offence."	Heroin-Woznicki's	16 weeks reducing to 12
"Evidence of neurological disease which may have been a causal factor."	Heroin-Woznicki's	12 weeks reducing to 10
"the medical conditions suggest he is not fully in control of his own actions"	Heroin-Woznicki's	18 weeks reducing to 16
"The illness which he suffers from results in his not being totally responsible for his actions although his drug habit was causal."	Heroin-Woznicki's	26 weeks reducing to 12
"Medical mitigation regarding his action."	Heroin-Woznicki's	14 weeks reducing to 10
"Medical condition contributed to nature of offence"	Heroin-Woznicki's	16 weeks reducing to 12
"He has severe mental health problems which have affected his culpability and it is likely that prison will not help his condition."	Heroin-Woznicki's	16 weeks reducing to 8
Compounding of addiction and intoxication		
"Being under the influence of drugs is an additional aggravating factor."	Heroin	16 weeks increasing to 18
"Drug use is an aggravating factor not mitigating"	Heroin	26 weeks unchanged
Drug involvement eclipses leniency		
"The damage to his brain was caused by his heroin addiction. That aggravates the offending."	Woznicki's-Heroin	18 weeks increasing to 20

Medical condition. Specific reference to the medical nature of David's condition was significantly more frequent in those conditions which included Woznicki's [$X^2=22.57, p<.001$]. The Heroin condition saw least reference made to the nature of the impairment being medical in nature, with only 16% of respondents characterizing it in these terms. In contrast, an average of 43% of respondents across the other three conditions offered a similar medical characterization (see Table 3.11)

Table 3.11 - Frequency with which impairment was described in terms of being a medical condition.

	<i>n</i>	Frequency	%
Heroin	70	11	15.7
Heroin-Woznicki's	69	24	34.8
Woznicki's	69	37	53.6
Woznicki's-Heroin	68	28	41.2

Vulnerable Victim. A reverse of this pattern was discernible in the frequency with which the vulnerable nature of the victim was offered as a consideration in sentencing decisions [$X^2=10.49, p=.02$] (see Table 3.12). Comparison across conditions indicated that participants in the Heroin condition were almost three times more likely to reference the victim in their deliberations than in any of the other three conditions [$OR_{pooled}=2.8, X^2=16.7, 95\%CI=1.7-4.6, p<.001$]

Table 3.12 - Frequency with which the vulnerability of the victim was referred to as a factor in sentencing decisions.

	<i>n</i>	Frequency	%
Heroin	70	22	31.4
Heroin-Woznicki's	69	10	14.5
Woznicki's	69	10	14.5
Woznicki's-Heroin	68	9	13.2

Mental illness. The frequency with which David's condition was specifically referred to in terms of its being a mental illness varied significantly across conditions [$X^2=8.88, p=.03$]. In line with expectation, Heroin-use and its associated impairment

was significantly more likely to be characterized as a form of mental illness if it was either followed by [OR=7.8, $X^2=4.87$, 95%CI=0.93-65.11, $p=.03$] or preceded by [OR=10.5, $X^2=7.15$, 95%CI=1.30-85.53, $p=.007$] Woznicki's disease.

Curiously, however, there was suggestion of a similar effect in evidence with regard to Woznicki's disease. Offering that Woznicki's was preceded by Heroin-use appeared to make it more likely for David to be described as having a mental illness [OR=2.5, $X^2=1.73$, 95%CI=0.61-10.03, $p=.19$], as did the knowledge that it had been followed by a period of Heroin-use [OR=3.6, $X^2=3.38$, 95%CI=0.87-12.68, $p=.07$] (see Table 3.13). Although neither of these results achieved statistical significance, the pattern is noteworthy given the high frequency of sentence reduction in the Woznicki's condition. In light of the legitimately mitigating fact of mental illness, it seems remarkable that the extension of leniency is so infrequently explained in these terms.

Table 3.13 - Frequency with which the condition described was characterized as a mental illness.

	<i>n</i>	Frequency	%
Heroin	70	1	1.4
Heroin-Woznicki's	69	7	10.1
Woznicki's	69	3	4.3
Woznicki's-Heroin	68	9	13.2

Drug use. There was significant variation in the frequency with which drug-use or dependency were highlighted as prominent factors in sentencing considerations [$X^2=23.38$, $p<.001$]. The frequency with which drug use or dependency was referenced as a factor in deliberation was roughly equivalent in the Heroin and the Woznicki's-Heroin conditions (20% and 21% of cases respectively), whilst, quite understandably, the Woznicki's condition sees no mention of it. In the Heroin-Woznicki's condition, however, drug-use is mentioned by only 4% of respondents as a component in their consideration (see Table 3.14). The impairment described here was attributed to Woznicki's, rather than the heroin-use which precipitated it, but no suggestion was made that drug-use had been curtailed. Despite this, it would appear that drug-use as a precipitating factor is of less relevance in sentencing considerations if the brain disease which developed from it is named as something other than addiction.

Table 3.14 - Frequency with which addiction/dependency was cited as a factor in sentencing decisions.

	<i>n</i>	Frequency	%
Heroin	70	14	20.0
Heroin-Woznicki's	69	3	4.3
Woznicki's	69	0	0.0
Woznicki's-Heroin	68	14	20.6

Brain Damage. The 5% of participants ($n=14$) who characterize the impairment described specifically as “brain damage” all reduce their original sentence (see Table 3.15). Of the 19 participants who reduced their sentence in the Heroin Aetiology condition, six cited brain damage as a primary component in the thinking behind their decision.

Table 3.15 - Frequency with which impairment was characterized as brain damage.

	<i>n</i>	Frequency	%	Reducers
Heroin	70	6	8.6	6
Heroin-Woznicki's	69	2	2.9	2
Woznicki's	69	3	4.3	3
Woznicki's-Heroin	68	3	4.4	3

Discussion

In a replication of the observed effect reported in Chapter 2, neurological impairment was a cue to leniency in sentencing when attributed to the fictional brain disease Woznicki's, whilst this leniency was blocked if the same impairment was attributed to addiction. Moreover, we were able to examine the balancing of these two factors when presented in tandem, observing partial leniency which fell mid-way between these two extremes. These findings demonstrate the crucial role of choice in impairment aetiology when considering criminal responsibility. However, we saw no impact on judgments of the age at which such choice was made, either in terms of sentencing behaviour or the rationales offered to underscore it.

It is clear to see that the distinction between brain impairment resulting from addiction to Heroin and that resulting from Woznicki's disease is significant in the minds

of sentencers. Significant to the extent that the Woznicki's narrative demonstrated a sevenfold greater likelihood of leading to reduction in sentence. This amounted to the difference between one week and six weeks off an eighteen week sentence. By employing Woznicki's as either a factor causal to drug-use or an impairment stemming from it, both the odds of receiving leniency and the extent of mean sentence reduction in respect of it fell midway between the Heroin (minimal leniency) and Woznicki's (maximum leniency) conditions.

Perhaps the most surprising distinction evident in these findings is that between the Heroin and Heroin-Woznicki's conditions. Not only were the neurological deficits described identically across the two groups, but also the initiation narrative. In the Heroin group, participants were given to understand that initial use of drugs had become habitual, culminating in neurological deficits associated with addiction. In the Heroin-Woznicki's group this sequence included an extra step: habitual use led to the development of a disease called 'Woznicki's' and it was to the impact of this syndrome which the damage to mental faculty was attributed. There is little to distinguish between these two narratives beyond terminology.

In one case, 'brain disease' has been replaced with the term 'addiction', whilst in the other the appended label is 'Woznicki's'. Drug-use remains a constant precipitating factor across both conditions. The difference which exists is, to all intents and purposes, a semantic one. Yet addiction by another name, it transpires, does indeed smell sweeter, increasing more than threefold the chances of receiving a reduced sentence.

In this example, it cannot be that addiction fails to inspire leniency by virtue of its association with drug use alone. Both scenarios begin with drug use. The Heroin and Heroin-Woznicki's conditions trace the impairment back to an identical origin and identical choice. Although in neither example is it offered that drug use has been curtailed, we may speculate that the Heroin condition contains the stronger implication of continued use. Yet the study presented in the preceding chapter gave strong indication that the context of initial choice was paramount in determining leniency, whilst the fact of having maintained a drug habit since that time was of lesser import.

Interestingly, leniency in the Heroin-Woznicki's condition occupied the same middle ground as that in the Woznicki's-Heroin condition. Here, it might be understood as 'Woznicki's' taking the place, not of addiction, but of a predisposition to take drugs in the first place. By replacing the somewhat diffuse notion of a heightened propensity for

drug use with a named (and hence legitimized) condition, the leniency extended falls mid-way between that seen in the Heroin and Woznicki's conditions. However, our results suggest that whilst a predisposing condition called 'Woznicki's' may provide sufficient explanatory power to merit some measure of leniency in sentencing, a predisposing condition called 'adolescence' does not.

The study presented in Chapter 2 indicated that Woznicki's could be rendered analogous to addiction solely with the addition of a self-initiation factor. The suggestion of Woznicki's having been diagnosed but voluntarily left untreated resulted in the withdrawal of leniency. Conversely, the suggestion that addiction initiation was outside the control of the individual in question resulted in increased leniency even where responsibility for the maintenance of that addiction could not be similarly attributed to a third party.

This accords with a common-sense interpretation. Compulsive drug-use is a defining characteristic of drug addiction, and compulsion in respect of criminal behaviour is an area covered extensively under the law. Whilst attempts to liken the compulsive nature of drug use to circumstances which might merit a legal defence of duress (Husak, 1999; Sullivan, 1973; Yaffe, 2013) have found little favour, the urge to take drugs is perhaps more readily understandable in the individual already addicted. Indeed, it is expected. In contrast, the choice to *first* use drugs appears uncompelled. The blame an addict bears for contributing to their own condition is necessarily titrated with the passage from habitual to compulsive drug-use, the loss of control over drug intake being a pre-eminent component of addiction.

However, that the Heroin-Woznicki's condition was equally likely to promote leniency in sentencing as the Woznicki's-Heroin condition calls into question this earlier impression. It could be that blame attaches to the choice to take drugs in both scenarios. Although the order of events is different in each, both conditions include the initiation component. Yet Woznicki's is described as a degenerative disorder associated with progressively impaired behavioural control, suggesting volitional impairment in advance of drug-use. To suggest that similar blame attaches to the choice in both conditions would be to suggest that the voluntary or involuntary nature of that choice is of little relevance to such considerations. It should be noted that the absence of any substantive difference observable in respect of the age at which drug-use was said to have been initiated would also lend itself to such an interpretation. In both cases it would appear

that consideration extended to the context in which first drug-use occurred was eclipsed by other, more salient factors. Yet, were that the case, what would there be to distinguish the Woznicki's-Heroin and Heroin conditions? The study presented in Chapter 2 showed us that responsibility for the initiation of drug-use was a significant determinant in the attribution of blameworthiness. The present study has given clear indication that this picture is, at best, incomplete. We previously saw the nature of initial choice markedly altering judgments, seemingly irrespective of the continued drug-use which followed. In our original scenario, first drug-use was said to have occurred eight years previously. No suggestion was made that attempts had been made to curtail use or seek treatment. Yet these years of drug-use did not appear to prevent the addict from receiving leniency in common with the Woznicki's sufferer when the initial choice to take drugs had not been theirs. From this it might appear that choice in initiation is all important, whilst the subsequent maintenance of an acquired addiction is of lesser relevance. However, the present study has given us reason to question this construction. We have seen in the case of the Heroin and Heroin-Woznicki's conditions that identical choice can lead to very different outcomes, whilst at the same time observing that the fact of such choice having occurred as a juvenile is apparently of little import. We might reasonably question, then, the measure of responsibility borne for the maintenance of addiction irrespective of voluntariness in its initiation. This possibility will be examined in the following chapter.

Chapter 4. Addiction and drug use: How the sentencing of addicted offenders is affected by the pattern and consistency of their drug use.

Abstract

In the previous Chapter we examined the impact of impairment aetiology on Magistrates' determinations of criminal responsibility. We found that leniency in sentencing was more frequently observed where Woznicki's was included in the aetiology, even where it was not directly causal to impairment, but did not observe any substantive difference in sentencing practice on the basis of initial drug-use having occurred as a juvenile rather than as an adult. The present study was conducted with the intention of replicating and extending the findings presented in Chapter 2, where we observed that the absence of choice in initial drug-use promoted leniency even where that use was ongoing. We were interested to see what impact periods of abstinence and instances of relapse in individual drug-use histories would have on perceptions of addicts' choice (or lack thereof) in their ongoing drug-use. 282 active and retired Magistrates in England and Wales were asked to consider a criminal sentencing scenario. Having selected an appropriate custodial sentence on the basis of the facts of the case, participants were presented with potentially mitigating or aggravating information about the defendant and given the opportunity to alter their sentence. All respondents were told that the defendant had been addicted to heroin and informed of the association between heroin-use and prefrontal cortical damage likely to result in impulsivity and a lack of self-control. Scenarios were varied along two dimensions: (i) the offender's initial addiction to drugs having been of their own doing (autogenic) or the fault of a physician (iatrogenic); and (ii) their history of addiction maintenance having featured abstinence or relapse. Where addiction was iatrogenic, sentence reduction was more likely, but only where drug-use was ongoing. These reductions were offset by a comparatively greater frequency of sentence increase in these same conditions, suggesting that iatrogenic addiction history was facilitating sentence alteration, but not directing it. We theorize that presentation of narrative aspects conflicting with a standard archetype may have the effect of derailing intuitive processes and promote review of previously ignored cues to judgment. In concert with this, different histories of addiction maintenance were associated with variation in the frequency with which criminal justice principles were cited and their rank order of importance in consideration, providing insight into the complex network of factors employed in judgment.

...if a man be doing any thing unlawful, and a consequence ensues which he did not foresee or intend...his want of foresight shall be no excuse; for being guilty of one offence, in doing antecedently what is in itself unlawful, he is criminally guilty of whatever consequence may follow the first misbehaviour.

Sir William Blackstone
Commentaries on the Laws of England (1769)

The findings presented in Chapter 2 gave indication that choice was a crucial component in judging the degree to which mental impairment impacted considerations of criminal responsibility. We observed that identical accounts of brain impairment resulted in different approaches to leniency in sentencing, seemingly determined only by the degree to which a choice had been voluntarily made in the initial acquisition of that impairment. The results presented in Chapter 3 appeared to confirm that it was this choice element which determined the will to leniency at the exclusion of what might otherwise be understood as relevant factors, such as the offender's brain state or the age at which first drug-use occurred. Focus was drawn to the contrast between drug-use leading to addiction and drug-use leading to 'Woznicki's disease', in which, crucially, both narratives involved the same choice element. In each of the scenarios the defendant bore the same level of responsibility for the choice made to begin using drugs and for continuing that use, yet there was a dramatic difference in the leniency extended on account of the resulting disease. This difference cannot have arisen as a result of perceived choice in initiation as this was matched across conditions.

A possible explanation is that an assumption was made by participants in the Heroin-Woznicki's condition that drug-use had been curtailed. Although this was not stated, it may have been concluded that the Woznicki's sufferer had stopped using drugs in the wake of his diagnosis. Yet, if this were the cause of the differences between the two conditions, it would run contrary to our initial impression of little account being taken of the subsequent maintenance of addiction. In Chapter 2 we saw that an iatrogenic origin of addiction prompted leniency almost in line with that seen in the case

of the non-drug-using Woznicki's sufferer. It appeared of little relevance to those extending leniency that the initial involuntary drug-use was followed by almost a decade of subsequent use. Absence of choice in that first instance seemed sufficient to excuse, or at least explain, potentially thousands of instances of further use. Long-term maintenance of addiction appeared minimally influential when set against the circumstances of initial use. Yet now we are presented with the possibility that this is not the case, having demonstrated a set of circumstances under which it seems the ongoing maintenance of an addiction provides a more meaningful cue to sentencing decisions than the nature of its initiation.

In their study of sentencing in Germany, von Helversen and Rieskamp (2009) contrasted five models of human judgment in terms of their ability to predict sentencing for low-level crimes. They discovered that sentencing decision-making was most accurately described by a heuristic model which relied on "a limited number of factors and neglected factors that were legally relevant and rated as highly important" (p. 375). In England and Wales, similarly 'frugal' heuristics have been shown to predict Magistrates' bail decisions with impressive accuracy (Dhami & Ayton, 2001).

Courts frequently operate under time pressure and without a truly complete picture, even under ideal conditions. Where information search is resource expensive, decision-making which relies on accessible cues is likely to prevail (Sutherland, 2007). In such example, parsing the nature and degree of responsibility borne for the maintenance of a drug habit is a time-consuming detour into unnecessary complexity when the extant fact of drug use provides a cue to judgment with high validity.

Yet we can ask legitimate questions concerning in which direction such a cue would direct thinking. Certainly, we saw some instances in the previous study of addiction being conflated with intoxication (see Table 3.10 on page 83), with the implication that it was being taken to be similarly aggravating. However, at the same time we might allow for the compulsive nature of addiction to bring into doubt the notion of full voluntariness of action. We saw in Chapter 2 that initial choice in drug-use was a driving factor in sentencing decisions, with seemingly little consideration paid to the years of subsequent use. It appeared that responsibility for causing the addiction was attached to the individual, whilst responsibility for continued drug-use was more readily attributed to addiction. Disrupting impression of the former by removing voluntariness from first drug use was therefore sufficient to promote leniency in sentencing with little

to no account being taken of the years of repeated drug-use which followed.

This would seem to imply a tacit acceptance of the compulsive nature of addiction, fully in keeping with its understanding as a neurobiological disorder rooted in disrupted self-control. However, the existence of addicts who successfully stop taking drugs would appear to illustrate that some measure of control over drug consumption is retained (Morse, 2011). If, once addicted, drug-use were truly irresistible, how is it that many addicts manage to stop taking drugs? Moreover, what of relapse? The abstinent addict who resumes drug-taking has already demonstrated their capacity to resist the drive to take drugs, so it surely cannot be an insurmountable urge. These are complicated questions, to which the answers can only lie in our understanding of compulsion as a facet of addiction.

All known addictive drugs activate the mesocorticolimbic dopamine circuit, which projects from cell bodies in the midbrain into the prefrontal cortex (PFC) and the striatum. PFC disruption may throw some light on heightened impulsivity, a paucity of long-term planning and even a weakened expression of moral responsibility in addiction (Baler & Volkow, 2006; Batts, 2009; Funk & Gazzaniga, 2009; Leeman, Grant, & Potenza, 2009), but does little to explain the preoccupying compulsion associated with drug-seeking behaviour. We might reasonably look instead to the striatum, a brain area associated with reward perception, motivation and reinforcement (Corbit & Balleine, 2016; Taylor, Lewis, & Olive, 2013; Yager, Garcia, Wunsch, & Ferguson, 2015). Natural reinforcers such as food and sex cause increases in extracellular dopamine in the striatum, and together with other behaviours which lead to this kind of activation, tend to be repeated (Kelley & Berridge, 2002). Activation of this system by addictive drugs is much more powerful than that by natural reinforcers, such that drugs effectively hijack a circuit in the brain associated with goal-orientation and cue salience (Sulzer, 2011). Perhaps unsurprisingly, the shift in striatal function from ventral to dorsal regions associated with repeated drug exposure occurs on a similar timeline to the transition from impulsive to compulsive drug-use in addiction (Everitt & Robbins, 2013). That drugs of many different kinds share in common the activation of this dopaminergic circuit projecting into a brain area associated with reward processing is telling of its importance in understanding addiction.

Repeated dopaminergic stimulation enhances long-term potentiation (Otani, Daniel, Roisin, & Crepel, 2003), leading to molecular and cellular changes which persist into

abstinence (Jones & Bonci, 2005; Lüscher & Malenka, 2011). In common with many of the neuroadaptations caused by repeated drug exposure, some of these changes appear to reverse following the cessation of drug-use, but neither the extent of this recovery nor the timelines involved are entirely clear (Korpi et al., 2015).

The Neuropsychology of Addiction and Related Conditions Research Program undertook a longitudinal study to examine structural and functional brain changes in addicts over prolonged periods of abstinence. They found that disrupted midbrain regions exhibited markers of neural recovery after six months' abstinence, with an associated reduction in drug-seeking behaviour (Moeller et al., 2012b). Likewise, a recovery in cortical grey matter volume has been observed in abstinent (or significantly reducing) cocaine addicts over a similar timeframe (Parvaz et al., 2016b), and this recovery correlated with improved decision-making and cognitive flexibility. However, a more complicated picture emerges when examining salience attribution associated with striatal alterations.

The Late Positive Potential (LPP) component of electroencephalogram (EEG) can be employed as a marker of motivated attention to stimuli (Hajcak, MacNamara, Foti, Ferri, & Keil, 2013) and, in an addiction context, can predict simulated drug-seeking behaviour (Moeller et al., 2012a). It makes sense, then, that LPP amplitude correlates with reports of cue-induced craving (Franken et al., 2008). However, measuring response to drug cues using LPP amplitude reveals a disagreement between subjective and objective measures of drug-craving. The subjective experience reported by abstinent addicts is one of drug-craving decreasing in line with length of abstinence, with self-reported cue-induced wanting and liking both reaching minimum values following six months abstinence. EEG markers associated with cue-induced drug-craving, on the other hand, demonstrate an *increase* in motivated attention to drug cues. This increased sensitivity peaks between one and six months of abstinence, before falling again at one year (Parvaz, Moeller, & Goldstein, 2016a). The apparent contradiction between the absence of self-reported drug-cue salience and the presence of its underpinning biological markers led the authors to speculate on the matter of relapse that a “period of vulnerability may occur without conscious awareness” (p. 1132). If craving can exist outside the scope of awareness, there is potential for genuinely irresistible compulsion, if for no other reason than the inherent difficulty in resisting something of which one is not aware.

There are those theorists who have likened the compulsive nature of drug-seeking to a form of duress, conceiving it as forced action and thereby bringing into question its voluntary nature (Husak, 1999, 2000; Yaffe, 2013). The law makes accommodation of this kind outside an addiction context, excusing behaviour which would ordinarily be criminal when it is forced. The difficulty introduced by addiction in this conception is arguably one of foresight. As outlined in the introduction, it is long-established in law that a defendant “cannot rely on the duress to which he has voluntarily exposed himself as an excuse” (*R v. Fitzpatrick*, 1977, p. 33). As such, even a defendant subjected to genuine compulsion cannot invoke this as a defence to action where “he could fairly be said...to have voluntarily exposed himself and submitted himself to such compulsion.” (*R v. Shepherd*, 1987, p. 51).

Is the addict the unwilling victim of an overwhelming compulsion? If so, we might consider it as a compulsion willingly entered into, and hence any analogy to duress dismissed. Yet, if addicts are not powerless in the face of their addiction, some measure of accountability must attach to the fact of continued use. The findings presented in the preceding chapters suggested that the nature of the initial choice to use drugs was of paramount importance in determining criminal responsibility. Specifically, the absence of choice promoted leniency, whilst perception of a voluntary choice having been made was sufficient to block that same leniency. If a single voluntary choice can anchor blameworthiness so effectively, we might readily speculate on the impact of considering the maintenance of an addiction as little more than a long sequence of voluntary choices. This study was conceived to investigate the extent to which these questions influence perceptions of culpability in a criminal justice context.

In Chapter 2, we saw that mitigation blocked in respect of addiction-related impairment could be forthcoming where the origins of that addiction were given as iatrogenic. By removing the initial choice to use drugs from the narrative, leniency was extended in common with that seen in the case of disease. This equivalency suggested that little account was being taken of the eight years' of drug-use which was described as having followed.

We hypothesized that perceptions of choice in drug-use could be modulated through the presentation of addiction maintenance histories which incorporated periods of abstinence or relapse. The addict whose drug-use has been uninterrupted presents the more compelling image of one whose will is bound by factors beyond their control. By

contrast, the addict whose history includes a period of abstinence has arguably demonstrated their ability to conquer the compulsion, lending a volitional quality to any subsequent relapse. Conversely, even a brief period of abstinence may indicate a will to betterment in the face of adversity sufficient to engender rehabilitative instincts in sentencers.

Method

Participants. A total of 283 active and retired Magistrates, invited via the Magistrates' Association website and by direct invitation, took part in this survey (131 Male, 137 Female, 14 withheld). One survey was incomplete, leaving 282 participants to be included in the primary analysis. Broadly in line with national figures, the majority (57%) of Magistrates participating in this study were between 61 and 70 years of age. Some participants were excluded from portions of the analysis for reasons given below.

This study was conducted in accordance with the British Psychological Society's Code of Ethics and Conduct. Informed consent was collected in advance and all respondents were debriefed and given the opportunity to withdraw their responses following participation. The study protocol was approved by the Research Ethics Committee of the University of Sussex.

Design. This was a mixed 2 (Choice) by 4 (Maintenance) design. As in the earlier studies, the Choice condition varied the circumstances of first drug use, offering that it had occurred either through the defendant's own actions (Autogenic) or a physician's mismanagement of their pain medication following an accident (Iatrogenic). The Maintenance condition offered four variants of the drug-use narrative (see Figure 4.1):

Continuous:	drug use for 8 years; currently using,
Quit:	drug use for 5 years, abstinent 3 years; currently abstinent,
Two Quit:	drug use for 5 years, abstinent 6 months, drug use for 3 years, abstinent 6 months; currently abstinent,
Quit Fail:	drug use for 5 years, abstinent 6 months, drug use for 3 years; currently using.

Across all conditions, the described structural and functional brain dysfunction was identical, and in all cases attributed to Heroin-use.

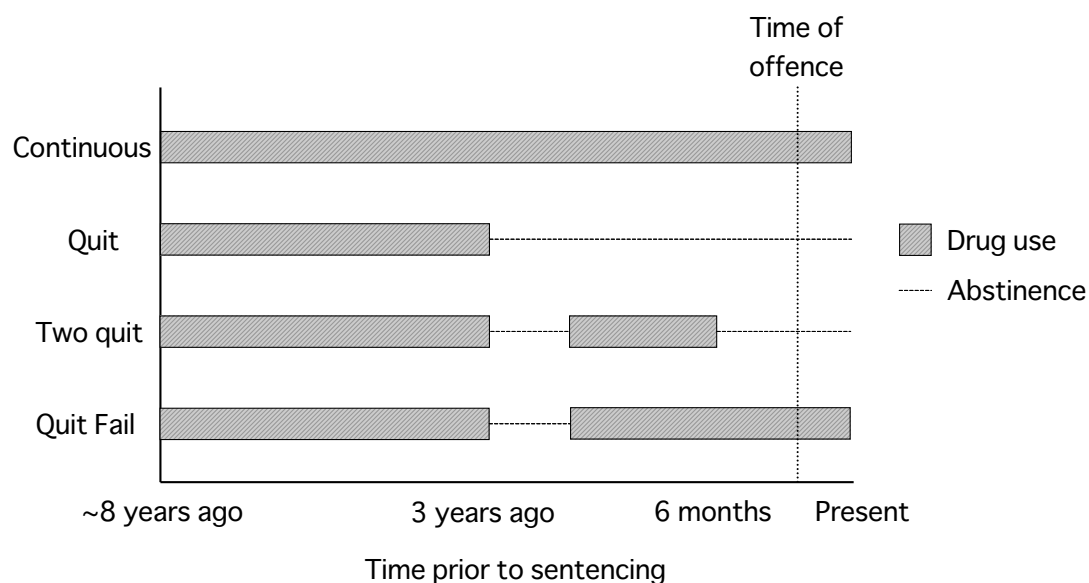


Figure 4.1 - Chronology of the four Maintenance conditions.

Procedure. The survey was hosted on the Qualtrics platform (Qualtrics, Provo, UT) and accessible via url. All participants were informed that they would initially be presented with a fictional scenario and asked to decide on an appropriate sentence. The scenario was as follows:

Edward is 27 years old and has no previous convictions.

Edward was in a small, independent shop close to his home buying some milk. The shop assistant was distracted by another customer and left the cash register open. Noticing this, Edward leant over the counter and stole £545 in cash before fleeing on foot. The shop's owner tried to block his exit and Edward collided with her, knocking her over and leaving her with a badly twisted ankle. He was pursued by a customer and two police officers who were on patrol in the area. After briefly losing sight of him, the officers apprehended Edward several streets away. Edward pleaded 'not guilty' to a charge of Theft (Theft Act 1968, s. 1).

Edward has now been found guilty at trial, with the following factors contributing to the seriousness:

- small, independent shop;
- large sum of money;
- use of force resulting in slight injury;
- shop had to be closed for 2 days whilst the owner recuperated.

Respondents were guided in this task with the information that current sentencing guidelines would suggest a custodial sentence of between 6 and 26 weeks. All participants were then asked to indicate, on a sliding scale of 1 to 26 weeks, how many weeks' custody they would consider appropriate, given the facts of the case as they had

been presented. Having decided on this initial ‘anchor’ sentence, they were subsequently presented with additional information on potentially mitigating or aggravating features. The first section of this additional information was identical for all participants:

Edward has a history of using Heroin, a drug which reduces grey matter volume in the prefrontal cortex, an area of the brain associated with action inhibition. Damage to this area has been demonstrated to result in impulsive behaviour and a lack of self-control.

Those in each of the eight conditions then received different histories concerning the origin of this damage (see Tables 4.1 and 4.2).

Table 4.1 - Aggravating or mitigating circumstances presented across Choice conditions.

Choice	Additional information
Autogenic	About ten years ago, when Edward was in his late teens, he became addicted to Heroin. Six months earlier, his doctor had diagnosed him as suffering from depression. Edward says that the depression he was suffering from at the time led to him becoming a Heroin user.
Iatrogenic	About ten years ago, when Edward was in his late teens, he became addicted to Heroin. Whilst abroad, he was hit by a car and spent several weeks in a local hospital, during which time he was regularly receiving morphine, an opioid painkiller. His regimen of painkillers was mismanaged and, although he recovered from his physical injuries, Edward had developed an addiction to morphine by the time he left the hospital and was able to return home. He says this led to him becoming a Heroin user.

Table 4.2 - Aggravating or mitigating circumstances presented across Maintenance conditions.

Maintenance	Additional information
Cont	Edward has been using Heroin on a daily basis for eight years.
Quit	Edward took Heroin on a daily basis for five years. He then stopped taking Heroin three years ago and has not used the drug since.
2quit	Edward took Heroin on a daily basis for five years. He stopped taking Heroin three years ago and remained abstinent for six months. He then began using again for approximately three years before quitting again last October.
Quitfail	Edward took Heroin on a daily basis for five years. He stopped taking Heroin three years ago and remained abstinent for six months. He then began using again and has continued to for the three years since.

Following the delivery of this additional information, participants were invited to

adjust their original sentence, within the same bounds of 1 to 26 weeks' custody. Once participants had chosen to increase, decrease or leave unchanged their original sentence, several follow-up questions were presented in order to probe the underlying rationale for the decision. Firstly, respondents were explicitly requested to provide the reasoning behind their decision. Secondly, they were presented with the five principles of justice as laid out in the Criminal Justice Act 2003 and asked to select those which were at the forefront of their consideration in making their determination. If more than one principle was selected, participants were then asked to rank them in order of relevance to their deliberation. Thirdly, all respondents were asked to indicate on a sliding scale how likely they thought it was that David would go on to commit further crimes in future.

Finally, all respondents were given the option of suspending David's custodial sentence in favour of a community order, with a view to facilitating his attending a residential treatment facility. Those who chose to suspend David's sentence were asked to indicate for how long they felt his suspended sentence should last, on a sliding scale between 1 and 24 months.

Measures and analyses. One participant submitted an incomplete response and was omitted from the analysis. As in the previous chapter (see page 67), decision rules were applied with regard to percentage and odds ratio calculations. Ten participants offered the minimum possible sentence of one week during the initial sentencing phase and were therefore excluded from analysis of sentence reduction odds. Seven of these respondents subsequently increased their initial sentence by more than 300% ($M=1,329\%$, $SD=390\%$) and by application of the same exclusion criteria employed in Chapter 2 (see page 48) were excluded from analysis in percentage terms. Eighteen respondents selected the maximum sentence of 26 weeks at the initial sentencing phase, preventing them from increasing the sentence should they have wanted to. These participants were excluded from analyses performed in terms of likelihood of sentence increase. It should be noted that for these reasons the number of participants in each condition varied slightly between tests.

Bayes Factor calculations were conducted at several points in the analysis, employing updated prior probability distributions derived from the studies presented in Chapters 2 and 3. Full Bayes Factor calculation parameters are detailed in Appendix I on page 185.

The relative frequency and importance of principles under consideration in sentencing decisions were contrasted between conditions and with participants' pre-experimental ratings. Participants were additionally given the opportunity to self-report the thinking behind their sentencing decisions in a text-based free response. These qualitative responses were coded for statistical and thematic analysis. Statistical measures were not calculated for qualitative responses where, due to small sample sizes, power analyses indicated only a marginal possibility of detecting even a large effect.

Results

We were interested in examining how the choice in initial drug-use and maintenance of addiction affected sentencing decisions. To this end, we asked Magistrates to consider a criminal sentencing scenario. Using a 2 (Choice) x 4 (Maintenance) design, Magistrates were provided with additional information which varied choice in the initial addiction and the nature of its subsequent maintenance.

At the initial sentencing phase, Magistrates used the full range of sentences available to them. Mean initial sentence was 14.3 weeks ($SD=6.2$; $N=282$). Following the introduction of potentially mitigating or aggravating factors, we sought to determine the impact of Choice and Maintenance on percentage change in length of custodial sentence. The data in the Choice conditions were not normally distributed [Autogenic $D(142)=0.43$, $p<.001$; Iatrogenic $D(133)=0.37$, $p<.001$] and exhibited heterogeneity of variance [$F(1,273)=6.9$, $p=.009$]. Although the data in the Maintenance conditions did exhibit homogeneity of variance [$F(3,271)=0.67$, $p=.57$], they were not normally distributed [Cont $D(67)=0.40$, $p<.001$; Quit $D(70)=0.47$, $p<.001$; 2quit $D(69)=0.37$, $p<.001$; Quitfail $D(69)=0.41$, $p<.001$]. For these reasons, specific group contrasts subsequent to the initial interaction analysis adopted non-parametric methods.

A 2-way independent ANOVA indicated a non-significant main effect of Choice on mean percentage sentence reduction outcome [$F(1,267)=0.85$, $p=.34$] and a non-significant main effect of Maintenance [$F(3,267)=1.42$, $p=.24$]. Additionally, there was a non-significant interaction effect between Choice and Maintenance [$F(3,267)=0.23$, $p=.88$] (see Figure 4.2).

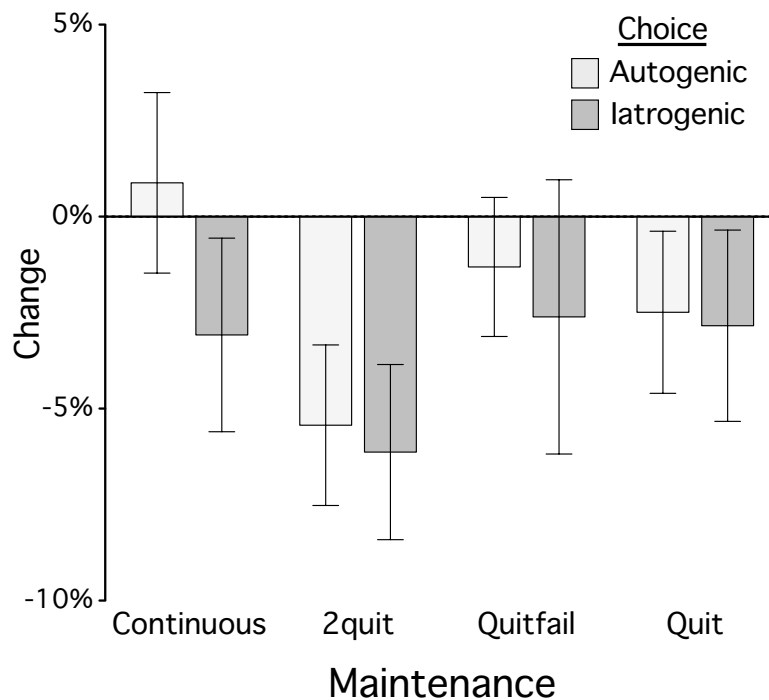


Figure 4.2 - Mean percentage sentence change by Choice and Maintenance ($N=275$; error bars $\pm 1\text{ SEM}$).

Choice. In order to determine the impact on leniency in sentencing of iatrogenic or autogenic origin of addiction, both the extent and frequency of sentence alteration were compared across Choice conditions.

Sentence reduction. In the event that the defendant's drug-use was explained as continuous and ongoing, which most closely replicated the original scenario presented in Chapters 2 and 3, there was a significant effect of choice in initiation on the likelihood of receiving a reduction in sentence. There was a significantly greater chance of receiving a reduction in sentence in the event that addiction was iatrogenic [$OR=5.3$, $X^2=5.98$, $95\%CI=1.03-27.42$, $p=.03$, $B_{H(0, 2.49)}=3.4$]. In contrast, there was little evidence of a similar effect in those conditions in which drug-use had been interrupted (see Table 4.3).

Table 4.3 - Likelihood of receiving a reduction in sentence.

Maintenance	Choice	<i>n</i>	Reduce	%	OR	X^2	<i>p</i>	Bayes Factor
Cont.	Autogenic	34	2	5.9	5.3	4.69	.03*	3.4
	Iatrogenic	32	8	25.0				
Quit	Autogenic	36	7	19.4	1.1	0.01	<i>ns</i>	0.2
	Iatrogenic	34	7	20.6				
2quit	Autogenic	35	3	8.6	3.6	3.29	<i>ns</i>	1.9
	Iatrogenic	32	8	25.0				
QuitFail	Autogenic	36	6	16.7	1.3	0.21	<i>ns</i>	0.2
	Iatrogenic	33	6	18.2				

Sentence increase. 9% of respondents ($n=23$) chose to increase the sentence they had given on learning of Edward's impairment and its origin in drug-use. Odds ratio analysis of the impact of addiction genesis on the likelihood of receiving an increase in sentence did not produce statistically significant results (see Table 4.4). Bayes Factor calculations indicated that the data were insensitive and therefore no conclusion can be drawn.

Table 4.4 - Likelihood of receiving an increase in sentence.

Maintenance	Choice	<i>n</i>	Increase	%	OR	X^2	<i>p</i>	Bayes Factor
Cont.	Autogenic	33	2	6.1	1.6	0.25	<i>ns</i>	1.0
	Iatrogenic	33	4	12.1				
Quit	Autogenic	33	0	0	5.2	1.33	<i>ns</i>	1.0
	Iatrogenic	34	2	5.9				
2quit	Autogenic	34	3	8.8	2.1	0.96	<i>ns</i>	1.0
	Iatrogenic	36	6	16.7				
QuitFail	Autogenic	31	2	6.5	2.2	0.91	<i>ns</i>	1.0
	Iatrogenic	30	4	13.3				

However, taken as a whole across the four Maintenance conditions, choice in addiction genesis did influence the likelihood of receiving a change in sentence. Overall,

respondents in the iatrogenic conditions were more likely not only to reduce their sentence [$OR=1.9$, $X^2=4.2$, $95\%CI=1.0-3.7$, $p=.03$, $B_{H(0, 2.49)}=1.9$], but also to increase it [$OR=2.4$, $X^2=3.7$, $95\%CI=1.0-6.1$, $p=.04$, $B_{H(0, 0.35)}=2.6$]. The effect of this in most cases was that reductions and increases balanced one another out, giving the impression of little change overall (see Figure 4.3).

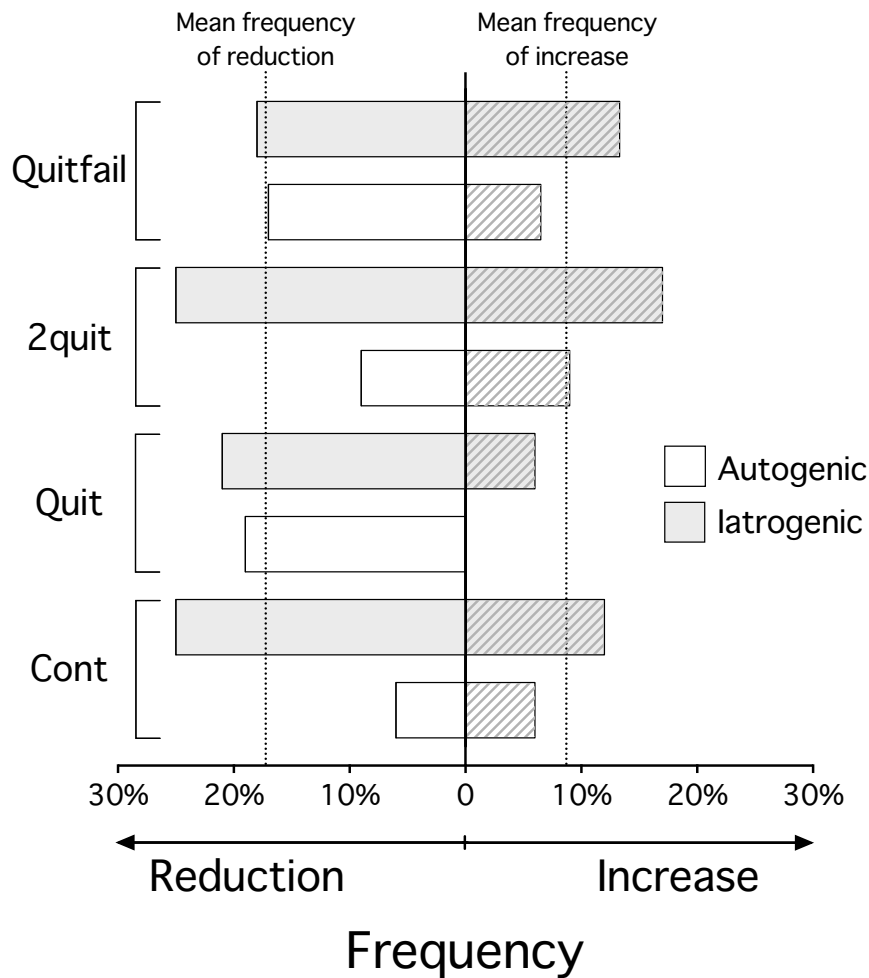


Figure 4.3 - Frequency of sentence reduction and increase across Choice and Maintenance conditions.

Maintenance history. Collapsing across the Choice variable, a Kruskal-Wallis test indicated a nonsignificant effect of Maintenance on mean percentage sentence reduction [$H(3)=3.4$, $p=.33$] (see Figure 4.4). The appearance of greater mean percentage reduction in the Quit condition was a consequence of fewer participants increasing sentences in that condition than the others (see Figure 4.4).

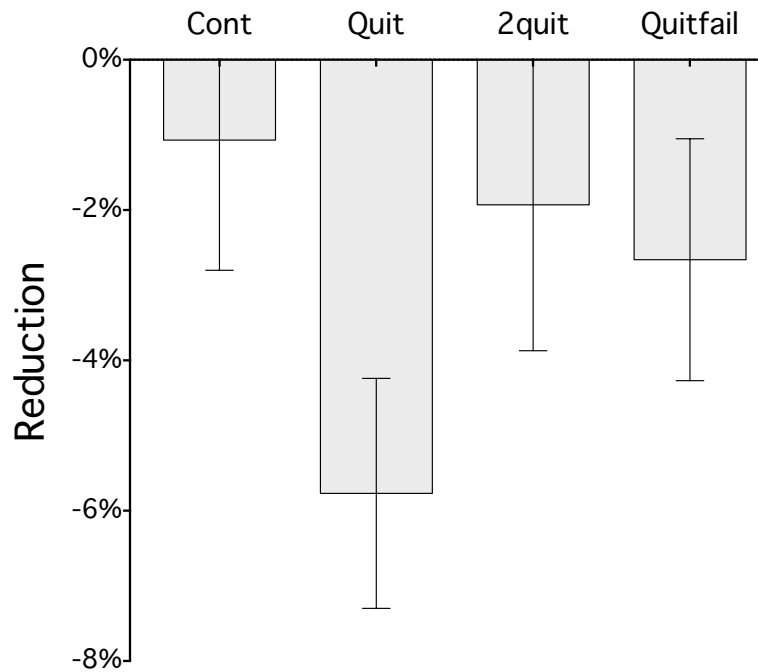


Figure 4.4 - Mean percentage sentence reduction across the 4 Maintenance conditions (error bars ± 1 SEM).

Contrasting only those participants who chose to alter the sentence they had originally given showed a pronounced difference in mean percentage sentence change across conditions (see Figure 4.5). Whilst the mean percentage change in sentence was downward in all conditions, that in the Quit Maintenance condition was approximately three times the extent of that in the other conditions. Whilst there was a marked difference between the Quit condition and all three other conditions, that between Quit and 2quit was nonsignificant following a Holm-Bonferroni correction.

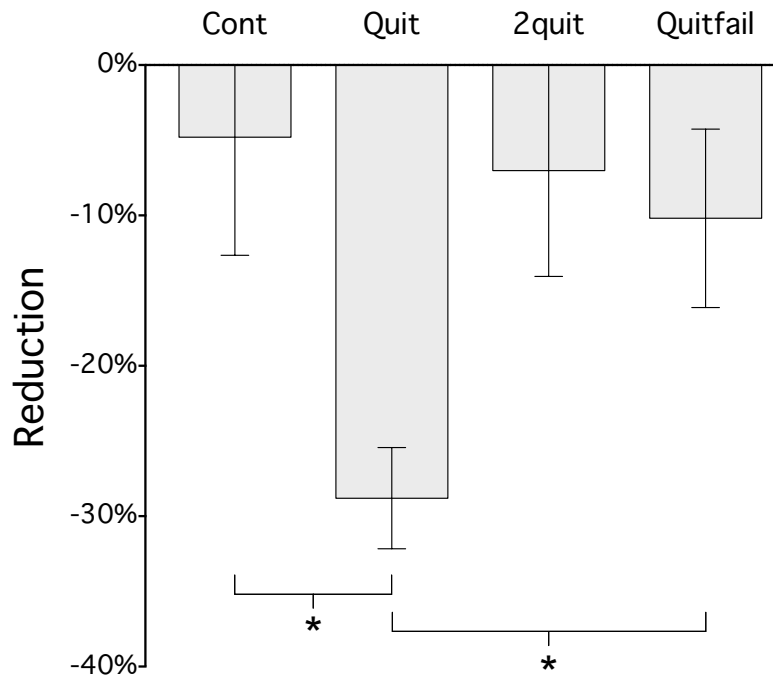


Figure 4.5 - Mean percentage sentence reduction (reducers only; $n=66$) across Maintenance conditions (* $p<.05$; error bars ± 1 SEM).

Reoffending estimate. In order to examine the relationship between current drug-use and estimated likelihood of future reoffending, we contrasted participants' opinions on the probability of future offences between scenarios in which the defendant was currently using or abstinent. Respondents estimated the likelihood of future offences to be significantly higher [$U=6428.5$, $z=-4.86$, $p<.001$ (two-tailed test), $r=0.48$, power=0.99] in the event that Edward was currently using drugs than when he was currently abstinent (see Table 4.5).

Table 4.5 - Estimated probability of future reoffending.

Status	<i>n</i>	Reoffending estimate (%)	<i>SD</i>
Using	137	70.5	(19.0)
Abstinent	141	62.2	(15.9)

There was no suggestion that the autogenic or iatrogenic choice component impacted respondents' perceptions of the likelihood of further offences in future (see Table 4.6).

Table 4.6 - Estimated probability of future reoffending across Choice and Maintenance conditions.

	Autogenic			Iatrogenic			U	z	p
	n	Estimate (%)	SD	n	Estimate (%)	SD			
Cont	34	71.9	(20.6)	34	70.6	(21.3)	564.5	-0.17	ns
Quit	36	62.3	(17.2)	35	58.8	(13.1)	511.5	-1.38	ns
2quit	35	63.3	(14.7)	35	64.3	(18.0)	593.0	-0.23	ns
QuitFail	36	68.6	(12.8)	33	71.1	(21.1)	477.0	-1.43	ns

Pearson product-moment correlation coefficients were computed to assess the relationship between estimated probability of future re-offending and length of either custodial sentence or community order. Length of final sentence was positively correlated with estimated probability of reoffending [$N=278$; $r=0.312$, $p<.001$]. Amongst those participants willing to see the custodial sentence suspended in favour of a community order ($n=234$), there was a positive correlation between the length of that community order and estimated probability of reoffending [$r=0.248$, $p<.001$]. Amongst those who chose not to suspend the custodial sentence [$n=44$], a nonsignificant positive correlation was observed between the length of final sentence and estimated probability of reoffending [$r=0.211$, $p=.17$].

In those conditions where drug-use was stated to be ongoing, fewer than one in ten Magistrates estimated Edward's chances of avoiding future criminal behaviour at greater than 50%.

Willingness to treat. 84% of respondents ($n=234$) were willing to see Edward's custodial sentence suspended in favour of a community order so that he could attend a residential treatment program, whilst the remaining 16% ($n=44$) did not exercise this option, considering a custodial sentence more appropriate. The frequency with which respondents showed a willingness to opt for a non-custodial disposal was broadly equivalent across conditions, and there was no indication that the odds of receiving a suspended custodial sentence in favour of a community order varied by condition (see Table 4.7).

Table 4.7 - Frequency of preference for community order or custodial disposal across Maintenance and Choice conditions.

	Cont.		Quit		2quit		QuitFail	
	Auto	Iat	Auto	Iat	Auto	Iat	Auto	Iat
<i>n</i>	34	34	36	35	35	35	36	33
Community Order	30	29	30	28	30	33	30	24
Custody	4	5	6	7	5	2	6	9

However, whilst the proportion of respondents willing to suspend the custodial sentence was broadly equivalent across conditions, there was a difference in the length of community order given according to condition. A 2-way independent ANOVA indicated a significant main effect of Choice on length of community order [$F(1,226)=5.76, p=.02$] and a significant main effect of Maintenance [$F(3,226)=3.54, p=.02$]. However, there was a non-significant interaction effect between Choice and Maintenance [$F(3,226)=0.66, p=.58$].

Specific contrasts indicated a significant effect of Choice, but only in the Continuous Maintenance condition (see Table 4.8). Although the differences in the other three conditions were non-significant, the difference in the Quitfail condition approached significance ($p=.06$), and *post hoc* calculations indicated limited achieved power (Quit=.11, 2quit=.12, Quitfail=.55). Bayes Factors gave strong evidence of an effect of Choice in the Quitfail condition and moderate evidence against the existence of an equivalent effect in the two conditions in which drug-use had been curtailed, suggesting the possibility of an impact of autogenic or iatrogenic choice which is influenced by current drug-using status.

Table 4.8- Length of community order given across Maintenance and Choice conditions.

Maintenance	Choice	<i>n</i>	Months	SD	<i>U</i>	<i>z</i>	<i>p</i>	Bayes Factor
Cont.	Autogenic	30	18.2	(6.4)	306.5	-2.04	.02*	-
	Iatrogenic	29	15.5	(4.7)				
Quit	Autogenic	30	14.7	(4.6)	396.0	-0.42	<i>ns</i>	0.45
	Iatrogenic	28	13.9	(4.0)				
2quit	Autogenic	30	14.9	(4.4)	493.0	-0.03	<i>ns</i>	0.25
	Iatrogenic	33	14.3	(5.7)				
QuitFail	Autogenic	30	17.1	(4.4)	274.5	-1.61	<i>ns</i>	316.9
	Iatrogenic	24	15.0	(4.0)				

Principles. The principle of justice cited most frequently as having been at the forefront of consideration in sentencing determinations was Punishment (see Table 4.9). Almost nine out of ten respondents indicated this to have been a significant factor in their thinking. This was followed by Protection, offered in four out of five instances, whilst the Reduction of crime was relevant to just over two-thirds of sentencers. Slightly fewer than one half of participants offered Rehabilitation to have been important in reaching their decision, whilst Reparation featured least frequently amongst the principles cited, mentioned only 26% of the time.

Table 4.9 - Frequency with which the five principles of criminal justice are cited in sentencing decisions.

Principle	<i>n</i>	%
Punishment	248	89.2
Protection	226	81.3
Reduction	193	69.4
Rehabilitation	138	49.8
Reparation	73	26.2

Only 5% of respondents (*n*=13) stated that just one of the five principles was at the forefront of their consideration when making their decision (8 Punishment, 2 Protection, 3 Rehabilitation). The remaining 95% of respondents (*n*=265) offered two or more

principles and were subsequently asked to rank them in order of relevance. If fewer than four principles were selected, those omitted were imputed through equiprobability coding (see Appendix D on page 178 for full details of this procedure). Rankings were then converted into weighted scores following the same procedure as outlined in Appendix A (see page 167) for direct comparison with the scores calculated there.

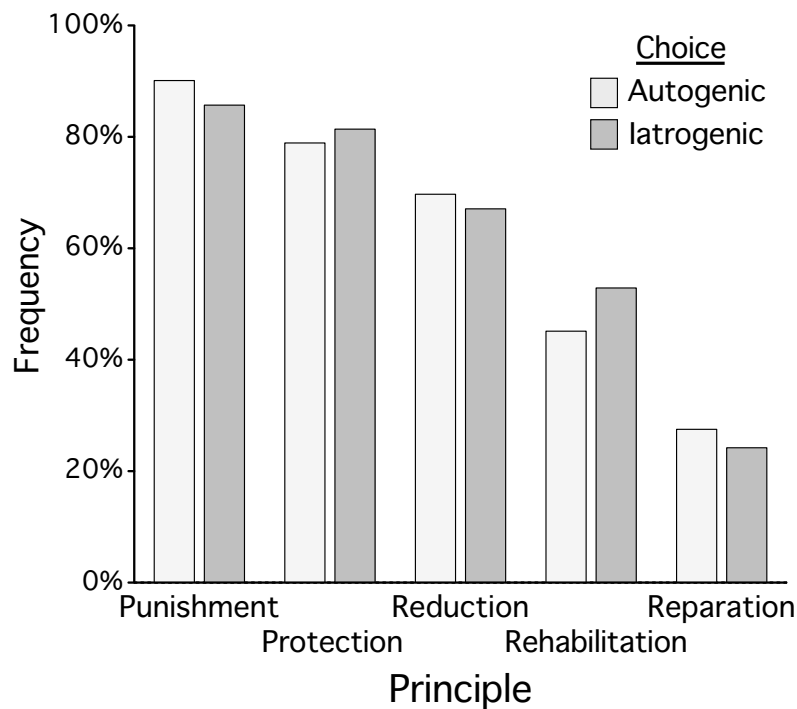


Figure 4.6 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Choice conditions.

The frequency with which the principles were cited as being a factor at the forefront of consideration did not vary in line with Choice in initial addiction (see Figure 4.6), but there was some variability in the frequency with which the principles were cited across Maintenance conditions (see Figure 4.7).

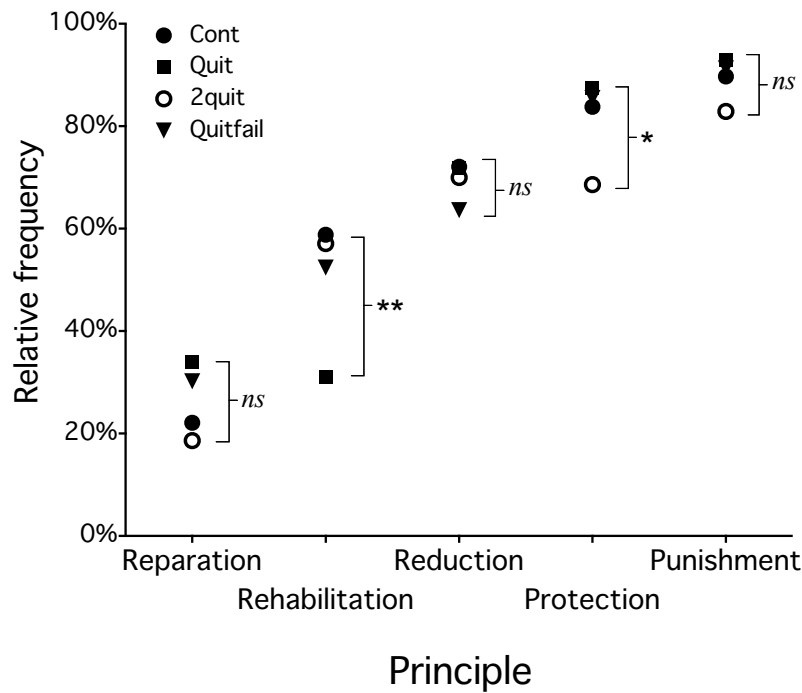


Figure 4.7 - Frequency with which the five principles of justice are cited as significant factors in sentencing decisions across Maintenance conditions.

Specifically, participants in the Quit condition offered Rehabilitation as having been a factor at the forefront of their consideration significantly less frequently than participants in the other three conditions [$X^2=13.5, p=.003$] (see Figure 4.8).

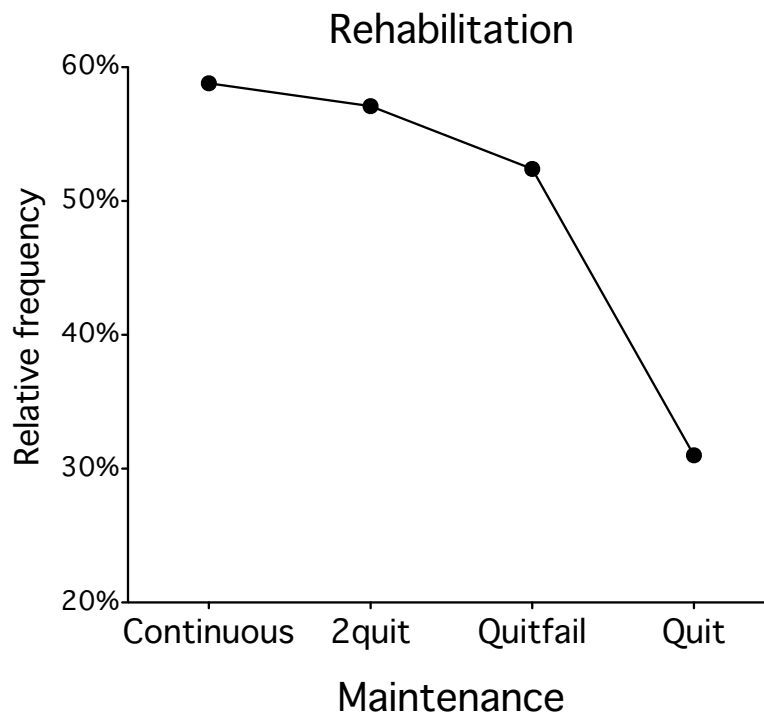


Figure 4.8 - Relative frequency of Rehabilitation being cited as a factor in sentencing decisions across Maintenance conditions.

In addition, the narrative of current abstinence despite past relapse outlined in the 2quit condition was associated with a slightly lower frequency of Protection being cited as a factor [$X^2=11.3$, $p=.01$] (see Figure 4.9).

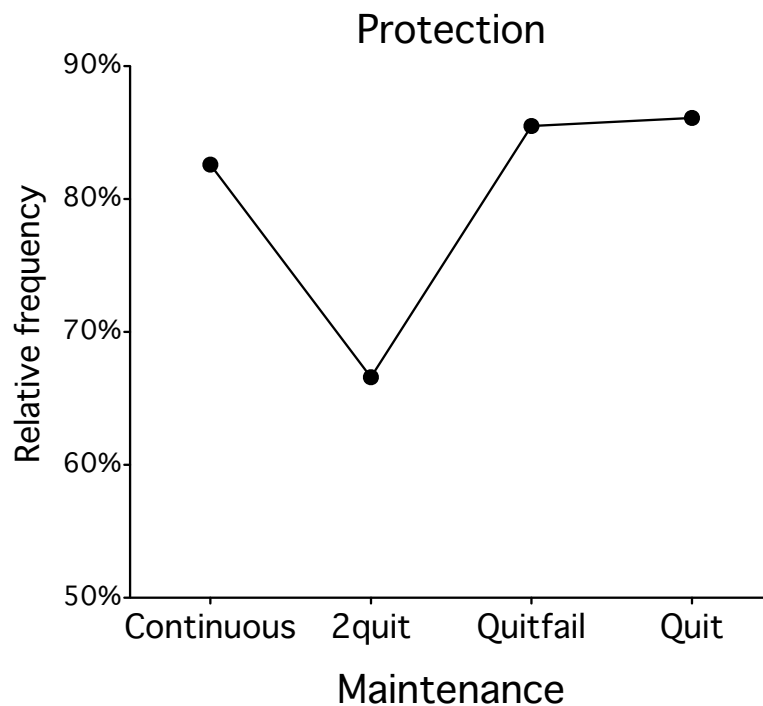


Figure 4.9 - Relative frequency of Protection being cited as a factor in sentencing decisions across Maintenance conditions.

Rank scores were calculated for the relative importance of the five principles, allowing the relative weight attributed to each to be contrasted with the scores outlined in Appendix A (see page 167) in relation to general sentencing practice (see Table 4.10).

Table 4.10 - Change in relative importance of principles between general sentencing practice and present scenario.

Principle	General Sentencing	Present Study	Difference
Protection	3.6	3.6	-
Rehabilitation	3.2	2.6	- 0.6
Reduction	3.0	2.9	- 0.1
Punishment	2.6	3.9	+ 1.3
Reparation	2.5	2.0	- 0.5

Opinions. In order to examine the extent to which Magistrates' drew on their personal understanding of issues surrounding addiction and drugs of abuse, we took the opportunity to compare Magistrates' sentencing decisions with their responses to post-experimental opinion questions (see Appendix B on page 171). As this was a *post hoc* analysis of small, unbalanced and self-selecting groups, statistical tests were not conducted.

Magistrates who agree with the statement 'Addiction is a disease' exhibit a slightly greater tendency towards sentence reduction than those who disagree with it. However, they also demonstrate a tendency to increase their original sentence with slightly greater frequency on discovering the drug-using history presented (see Table 4.11).

Table 4.11 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement A: Addiction is a disease.

		Reduction	Increase
Addiction is a disease	Agree	19.4%	9.6%
	Disagree	10.0%	7.1%

In fact, amongst those who agreed with the statement 'Addiction is a disease', the proportion of participants increasing their sentence was greater than amongst those who agreed with the statement 'Drug addiction is evidence of a lack of moral character' (see Table 4.12). Curiously, there was more frequent sentence increase on the part of those who disagreed with the statement 'Drug addiction is evidence of a lack of moral character' than amongst those who agreed with it.

Table 4.12 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement B: Drug addiction is evidence of a lack of moral character.

		Reduction	Increase
Drug addiction is evidence of a lack of moral character	Agree	5.2%	5.5%
	Disagree	18.4%	8.8%

Sentence reduction was more prevalent amongst those who disagreed with the statement 'All addicts must at one time have chosen to start taking drugs', although those

who agreed with it were nevertheless more likely to reduce their sentence than to increase it (see Table 4.13). The tendency towards sentence increase was broadly equivalent between those who agreed and disagreed with the statement.

Table 4.13 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement C: All addicts must at one time have chosen to start taking drugs.

		Reduction	Increase
All addicts must at one time have chosen to start taking drugs	Agree	14.8%	8.8%
	Disagree	24.0%	10.2%

Participants who agreed with the statement 'People punished for taking drugs are less likely to take them in future' were nevertheless more inclined towards sentence reduction than increase on learning of Edward's drug history (see Table 4.14). Indeed, there was a greater occurrence of sentence reduction amongst those who agreed with the statement than those who disagreed with it.

Table 4.14 - Frequency of sentence reduction or increase by participants agreeing or disagreeing with Statement H: People punished for taking drugs are less likely to take them in future.

		Reduction	Increase
People punished for taking drugs are less likely to take them in future	Agree	21.9%	12.9%
	Disagree	15.7%	8.2%

Thematic analysis. All respondents were asked to provide a brief rationale for the sentencing decision they had taken by means of a text response. Selected examples of the received responses are presented in Table 4.17 on page 117. These answers were coded to allow for statistical and thematic analysis, highlighting emerging themes among the factors which are most frequently cited as having underpinned sentencing decisions.

Mention of addiction. Mention of addiction amongst sentencing considerations was associated with a significantly greater incidence of sentence increase [$X^2=8.0$, $p=$.

04]. However, mention of addiction is also associated with a higher likelihood of receiving a reduction in sentence [$X^2=4.1, p=.04$]. Almost half of all respondents (48%) who increased their sentence mentioned addiction as a component in their consideration when reaching the decision. At the same time, more than one in three respondents (36%) who reduced their sentence did likewise.

Approximately one in ten respondents ($n=29$) specifically offered that drug use was irrelevant to their consideration and, in keeping with this, did not alter the sentence they had previously given.

Irrelevant factors. Approximately one in five respondents ($n=51$) offered that none of the additional information with which they had been provided served either to mitigate or aggravate the offending. None of these participants either increased or decreased the sentence they had previously given.

Iatrogenic addiction. Although our results suggest a limited consideration of the distinction between autogenic and iatrogenic addiction in reaching sentencing decisions, it would seem that this factor is influential on those occasions when it is considered. Of the 131 participants who received an iatrogenic variant of the narrative, only 10 (8%) mentioned this as a factor in their consideration when deciding on their sentence. However, of these ten, all but two reduced the sentence they had originally given. The likelihood of receiving a sentence reduction was significantly greater in the event that the iatrogenic nature of addiction was a salient factor in thinking [$OR=19.0, X^2=21.0, 95\%CI=3.8-96.2, p<.001$]. No respondent who mentioned the iatrogenic nature of the addiction increased their sentence.

Attempts to quit. 16 participants made mention of past attempts to curtail drug-use as a factor in their deliberations, representing 8% of participants who were presented with that information. Where, as with these respondents, past attempts to quit were offered as salient in consideration, there was a greater likelihood of sentence reduction [$OR=7.5, X^2=18.5, 95\%CI=2.6-21.3, p<.001$]. Past attempt to curtail drug-use was mentioned with the greatest frequency in the Quit condition. However, in only one in three cases did this translate into a reduction in sentence. Nevertheless, it would appear that consideration of previous attempts to quit tends towards invoking leniency. Whilst more than half of those who commented on this did so in the context of reducing their sentence, not one participant who mentioned this as a factor in their decision-making chose instead to increase.

Prison. Four participants expressed a lack of faith in prison to rehabilitate, all of whom reduced their sentence. In contrast, 15 respondents included the potential for custody to facilitate rehabilitation in their sentencing rationale. However, only one in five ($n=3$) of those who expressed such a view translated this into an increased sentence.

Mitigation or aggravation. There was some variation in the frequency with which addiction was offered as a salient factor in sentencing decisions (see Table 4.15). Addiction is mentioned more frequently as a factor in sentencing decisions where drug-use was ongoing, but with the greatest frequency where an unsuccessful attempt had been made to quit in the past.

Table 4.15 - Frequency with which addiction is mentioned as a factor in sentencing decisions by Maintenance condition.

Condition	Frequency
Quitfail	42%
Cont	26%
2quit	22%
Quit	8%

Almost a quarter of all respondents ($n=69$) mentioned addiction as a factor at the forefront of their consideration when making their sentencing decision. Of these, 53 additionally commented on their view of addiction's mitigating or aggravating nature in reaching such decisions (see Table 4.16).

Table 4.16 - Perceptions of addiction's mitigating or aggravating power amongst respondents mentioning addiction as a factor in their decision-making ($n=53$).

	Mitigates	Aggravates
Yes	15%	15%
No	53%	17%

Control. Across those conditions in which drug-use was described as having been curtailed (Quit and 2quit) there was variation in the frequency with which Edward was specifically referred to as having been in control of his actions. Seven respondents (10%) in the Quit condition offered this as a consideration in their decision, whereas none of the respondents in the 2quit condition did likewise. Of those seven, all but one had

received the Iatrogenic variant of the narrative.

In each of the conditions in which drug use was described as ongoing (Cont and Quitfail), a single respondent also took this impression that Edward was in control of his actions at the time of the offence. Both of these participants had been presented with the autogenic variant of their narrative. None of the respondents who offered their considerations to have included Edward being in control of his actions either increased or reduced their sentence, suggesting that this may have been a balancing factor set against other considerations in weighing their ultimate decision.

Table 4.17 - Factors offered by Magistrates as considerations in sentencing decisions.

Response	Choice	Maintenance	Sentence change
Longer sentence to aid rehabilitation			
"Longer time to possibly assist in rehabilitation."	Iatrogenic	2quit	15 weeks increasing to 16
"Addict needs more help."	Autogenic	2quit	12 weeks increasing to 15
"His addiction problems would have some chance of being addressed with a longer sentence"	Iatrogenic	2quit	16 weeks increasing to 26
"A longer sentence may have the ability to deal with his addiction in prison."	Iatrogenic	2quit	18 weeks increasing to 24
"A year in prison would enable him to get support in managing his abstinence."	Iatrogenic	2quit	12 weeks unchanged
Prison as a risk factor			
"I don't want him exposed to prison availability of heroin for any longer than necessary."	Iatrogenic	2quit	6 weeks reducing to 3
"He is clearly at risk of using drugs again if he goes to prison. Nevertheless some prison sentence is needed."	Autogenic	Quit	12 weeks reducing to 8
"Less opportunity to be tempted by drugs in prison."	Iatrogenic	Quit	16 weeks reducing to 12
Drug use is aggravating			
"The offence is aggravated by his regular use of Heroin."	Autogenic	Quitfail	16 weeks increasing to 20
"Heroin addiction not under control and aggravating, further, his crime."	Iatrogenic	2quit	1 week increasing to 16
"Drug use is if anything an aggravating factor."	Autogenic	Continuous	20 weeks unchanged
"The use of drugs over a long period aggravates the offence."	Autogenic	Quitfail	26 weeks unchanged.
Drug use is historic and hence irrelevant			
"Irrelevant as he was not using heroin at this time and hadn't been for some time."	Autogenic	Quit	20 weeks unchanged
"Edward was not using heroin at the time and had not done so for a number of years."	Autogenic	Quit	16 weeks unchanged
"Use of Heroin historic. No evidence of any impairment of capacity noted at time of crime."	Autogenic	Quit	12 weeks unchanged
"He is no longer a Heroin user. After three years drug-free his drug history is not currently relevant."	Autogenic	Quit	20 weeks unchanged
"Information is that he does not currently use drugs and no evidence offered that the money was taken to buy drugs so therefore irrelevant."	Iatrogenic	2quit	10 weeks unchanged
"His previous heroin use is not relevant."	Iatrogenic	Quit	12 weeks unchanged
"His period of drug abstinence would appear to indicate that this had little or no influence on his 'mens rea' in committing this offence, and hence need not affect the sentence."	Iatrogenic	Quit	16 weeks unchanged
Compounding of addiction and intoxication			
"Being under the influence of drugs is an additional aggravating factor."	Autogenic	Continuous	12 weeks increasing to 14
"As with alcohol, a person deciding to take drugs has responsibility for their actions whilst on those drugs."	Autogenic	Quitfail	18 weeks unchanged
Medical by virtue of Iatrogenic origin			
"Edward's addiction to heroin resulted from poor medical decisions and was not of his own making - it could be considered at least to some degree as a medical problem for this reason."	Iatrogenic	Quitfail	6 weeks reducing to 4

Discussion

In line with our earlier findings, introducing suggestion that initial drug-use had not been voluntary had a significant impact on the likelihood of receiving a reduction in the length of custodial sentence. However, this impression was by no means consistent under all circumstances. Rather, the anticipated result was observed only where (as in our original paradigm) drug-use was described as ongoing and uninterrupted. Across the three conditions in which some period of abstinence was included in the drug history, there was little indication of a like effect. Even where sentence reductions were extended by some of our respondents, these were offset by increases applied by others, such that the origin of addiction having been iatrogenic was associated with a greater likelihood of sentence alteration in either a downward or an upward direction. On its face, this would appear to contradict our earlier impression that the initial choice to use drugs, and in particular the voluntary nature of that choice, was of significant relevance in the ultimate determination of criminal responsibility.

Equally, the autogenic or iatrogenic origin of addiction appeared to hold little distinction amongst those who were moved to alter their initial sentence. Considering only those who changed their sentence, the overall extent of reduction was equivalent across conditions. Outside of the ‘traditional’ narrative presented in the Continuous Maintenance condition, what effect the iatrogenic nature of addiction appeared to exert on either the likelihood or the extent of sentence reduction was offset by an equivalently increased likelihood of sentence increase.

The autogenic or iatrogenic choice component in addiction initiation was a factor in determining the length of community order, but in like fashion this was not observed under all conditions (see page 106). Instead, length of community order was significantly lower when initial drug use was iatrogenic in origin, but only in the two conditions where drug use was understood to be ongoing. Where both offence and sentencing had taken place following the cessation of drug use, there was no comparable indication that the origin of impairment was at the forefront of consideration in decisions of this kind.

It is possible that, where the autogenic variant is presented, implicit assumptions go uncontradicted and judgments remain intuitive, whilst the more atypical iatrogenic narrative may have interrupted automatic processing, replacing it with a more thorough review of the information provided. In this way, changes to initial sentence could have been more frequent in the iatrogenic conditions without being the direct result of that

factor. Heuristics are most effective when cues fall into familiar categories, and the iatrogenic narrative introduces an unfamiliar cue in the shape of the defendant's initial drug-use having been outside of his control. This may have given our respondents pause to reconsider and incorporate a wider range of factors into their thinking than when making a similar decision on familiar ground.

Von Helversen and Rieskamp (2009) reviewed evidence of task-based cognitive strategy across several spheres of decision-making, including the judicial, and concluded that a rule-based mapping model was the most accurate predictor of outcome. The model proposes that decisions derive not from a thorough review and weighing of all potentially relevant factors, but rather from the step-wise consideration of a limited number of specific cues with high validity. Crucially, the validity of these cues relies on prior understanding of the direction in which they operate. Von Helversen and Rieskamp argue that, where such knowledge is absent, decision-making relies instead on matching relevant cues with previous exemplars. Simply put, judgment may be based on a limited number of cues if cue direction is known and, if not, decisions rely instead on the similarity of certain features with examples from past experience. It may be that the iatrogenic variant of the narrative introduces an unfamiliar cue, thereby prompting an overall reassessment of cue validity and hierarchy. By disrupting the heuristic being applied, the iatrogenic narrative may open the door to cues which previously fell outside the scope of consideration or invoke processes which are customarily short-circuited when operating on more familiar ground. That some of these could have pointed towards increased culpability would account for the somewhat counterintuitive finding that initial drug-use having been involuntary is associated with a greater likelihood of receiving an increase in sentence.

Of the ten respondents who commented on the iatrogenic nature of the addiction having been amongst the factors in their deliberation, eight reduced their sentence, suggesting that it tended towards invoking leniency when salient. However, that only ten respondents commented on it out of a total of 133 who were presented with the information suggests even more strongly that its passage into salience as a cue with high feature validity was comparatively infrequent.

Along the dimension of Maintenance, by contrast, none of the variations presented in our narratives contradicted common experience. The narratives included generally understood features of addiction such as long-term drug-use and periods of abstinence

followed by relapse - there was little about them which could be regarded as unconventional. Across our four Maintenance conditions, Edward was in general more likely to receive a reduction in sentence than he was an increase. The greatest likelihood of receiving an increase in sentence on disclosure of drug involvement was seen when he was described as currently abstinent, but with an instance of relapse in his drug-use history. Set against this, the appearance of the most pronounced leniency in respect of maintenance history was in the Quit condition, where drug-use was said to have been curtailed three years ago without relapse during the time since. On presentation of this information, Magistrates were slightly more inclined towards reducing their sentence than in any of the other three conditions, and this tendency towards more frequent reduction was coupled with a comparatively minimal inclination towards sentence increase. In combination, these two developed a picture of greater leniency in response to the Quit narrative. It is difficult to reconcile this with the fact that when participants in the Quit condition were asked to specify and rank which principles of criminal justice underpinned their sentencing decisions, it was Punishment which was foremost in their consideration, being cited with greater frequency and rated of greater importance. Although there is more to this principle than the merely punitive, it does seem counter-intuitive that rating it as being of greater importance was associated with greater leniency in sentencing. At the same time, Rehabilitation was cited far less frequently in this condition than any other and received its lowest rating of importance. This was the singular instance in which it was rated as the least important of the principles, falling into fifth place behind Reparation.

Of our four maintenance narratives, three included either ongoing drug use or previous relapse. In each of these conditions, sentencing decisions were more likely than not to be stated as having been predicated in part on rehabilitative principles. In the Quit condition, however, where drug use was historic and had been curtailed without relapse, fewer than one in three respondents considered rehabilitation to be a primary factor in deciding their sentence. This is, perhaps, merely the context in which the question was posed - where an offender is or has been a drug addict, there is a reasonable inclination to consider any rehabilitation to begin with addressing drug-use. We might expect to see rehabilitation feature more prominently in consideration when that use is ongoing, and less so when it is not. Yet this was not the case in the preceding chapter, where the lack of drug involvement in the Woznicki's narrative did not appear

to make rehabilitation any less relevant, and in fact it was in the straightforward addiction narrative that rehabilitation was cited significantly less frequently (see pages 78-79).

Our fictional offender was more likely to receive a reduction in sentence from a Magistrate who expressed agreement with the disease model of addiction than one who disagreed, but this same was also true when looking at the likelihood of receiving an increase in sentence. It would appear that understanding addiction to be a disease is associated with an openness to sentence modification, but does not necessarily result in a downward adjustment. Contrastingly, Magistrates agreeing with the statement ‘drug addiction is evidence of a lack of moral character’ were less likely to alter their sentence in either direction than those who disagreed.

We have already had reason to question the simple dichotomy of addiction being perceived as either disease or moral failing. It is clear in this instance that agreement with the disease model of addiction is associated with a greater exhibition of leniency in sentencing. Yet there appears to be no countervailing tendency towards harsher sentencing on the part of those expressing disagreement with the disease model or, for that matter, those understanding addiction as evidence of a lack of moral character: they are as comparatively unlikely to increase their sentence as they are to reduce it. Instead, what impression exists of a dichotomy is one between those who are more or less easily swayed, in either direction, by the additional information provided. Across all conditions, the tendency towards sentence reduction was restricted to, at most, one in four participants. Almost three-quarters of respondents did not deviate from the sentence they had given in the first instance, neither reducing nor increasing it. A portion of this may be accounted for by the balancing of factors, and indeed thematic analysis of sentencing rationales gave some evidence of this. There were certainly references made to mitigating and aggravating factors having the effect of cancelling one another out, yet these were far from extensive. More common was suggestion that none of the information provided was of relevance. These were not instances of ascribing equivalent weight to countervailing factors, but rather of discerning that these factors bore no weight.

Guidance issued by the Sentencing Council of England and Wales (Sentencing Council, 2017) states that a crime having been committed whilst under the influence of drugs or alcohol is an aggravating factor indicating greater culpability. However, at no

point in our vignettes was it suggested that the defendant was intoxicated at the time of the offence. Rather, the ‘influence’ of drugs which was suggested was long-term: the changes to brain structure and function associated with repeated exposure. It is difficult to argue that this is the influence which the guidelines speak of, as the counterpart list of factors indicating significantly reduced culpability features ‘mental illness or disability’ (p. 20). The interpretation of addiction as a disease, though predominant across our sampled respondents, is not a prerequisite for understanding of the brain impairment outlined in our scenarios as presenting exactly such a factor.

The dismissal of iatrogenic or autogenic origin effects when drug-use had been curtailed perhaps gives a clue as to the logic underpinning these decisions. No suggestion was made in our scenarios that the described impairments were extant only during periods of continued drug-use, yet personal accountability for initial drug-use appeared to be rendered irrelevant by abstinence. In much the same way that the distinction between voluntary and involuntary intoxication only informs judgment when the individual in question was intoxicated at the time of the offence, it seems a similar logic may render the ‘voluntary’ or ‘involuntary’ nature of first drug-use of relevance only when drug-use is ongoing. Taken together with some of the rationales offered for sentencing decisions (see page 117), this suggests a perceived interrelationship between, and perhaps even a confounding of, intoxicated and addicted brain states on the part of sentencers. It also poses a question: how, and to what extent, do these two interrelate when they are both salient factors in judgment? This is the question we will address in the following chapter.

Chapter 5. Addiction and intoxication: How the sentencing of addicted offenders is affected by their intoxication at the time of the offence.

Abstract

Across the preceding chapters we have seen instances in which chronic addicted state is seemingly confounded with acute intoxication. We saw the clear evidence in Chapter 4 of perceived choice in drug-use initiation resulting in retroactive responsibility for current addiction-related impairment, seemingly by application of a version of the prior fault logic which operates in cases of intoxication. However, this is a distinct variant of prior fault logic which can be distinguished from its operation in the case of intoxication in several important ways. Addiction and intoxication operate on different time scales, can be extant in isolation from one another and, when co-existing, there is scope for addiction to undermine the perception of intoxication being wholly voluntary. This study was conceived to examine these questions surrounding the interrelationship of addiction and intoxication in a criminal justice context and the operation of prior fault logic in determinations of culpability for offending. We asked 290 UK Magistrates to consider a criminal sentencing scenario in which evidence of the defendant's state of intoxication at the time of the offence was presented in tandem with information that they were either teetotal, a casual drinker or an alcoholic. We found that intoxication reduced blameworthiness for criminal acts if the offender had no previous experience with alcohol whilst, in direct contrast, intoxication served to aggravate offending if the defendant was an alcoholic. Our defendant was more than ten times as likely to receive a reduced sentence in the event that, though intoxicated, they were not also an alcoholic. The state of being an alcoholic was moreover aggravating in its own right, being associated with harsher sentencing even where the offence in question was committed whilst sober. Leniency was blocked by alcoholism despite Magistrates' qualitative responses suggesting its understanding as a generally mitigating factor, revealing a disconnect between expressed opinion and sentencing behaviour in practice. Our results indicate that, far from excusing drunkenness, alcoholism is more often taken to be an aggravating factor in sentencing decisions, even where the offender was sober at the time of the offence.

Obviously the scope of the defence of drunkenness in common law is very much limited. A modification of the law would bring into closer harmony moral and legal responsibility. But in view of the serious consequences to society of such a step, it is not likely that the future will witness any broadening of the scope of this defence except in so far as drunkenness comes to be treated as a disease. There are inebriates who cannot help being such for reasons of a diseased condition of the brain induced by alcohol either voluntarily or on account of the heritage of a neurotic and unstable brain; and it is but fair that law should take as much account as it can, in such cases, of the factors that may modify or make impossible full responsibility by fettering or preventing normal volition.

Dr R. U. Singh

History of the Defence of Drunkenness in English Criminal Law (1933)

Where a person is judged to have been insensate at the time of an alleged offence, there can be no criminal liability. As outlined in the Introduction (see page 19), the *actus reus* must be accompanied by *mens rea* in order for it to be considered criminal. These terms are derived from the writings of Sir Edmund Coke, a 17th-century English legal scholar who addressed infirmity of mind and its regard under the law. In his 1628 volume *The First Part of the Institutes of the Laws of England* he outlines the potential for excusing the actions of those considered *non compos mentis* (unsound of mind), in accordance with the notion that bodily action in the absence of mental control cannot be criminal.

As has been developed in the preceding chapters, the voluntariness of action is the touchstone of criminal liability. Where voluntariness is understood to have been entirely absent, no criminal liability can attach to acts. That action was compelled or induced can suggest the partial absence of voluntary control over behaviour sufficient to merit leniency in sentencing. As a result, offences committed whilst under the influence of psychoactive substances pose a problem.

The spectrum of intoxicated mental states ranges from the mild lowering of

inhibitions through to the complete loss of awareness and memory (White, 2003). In cases of acute alcohol intoxication, for example, it may be entirely plausible for a criminal defendant to argue that they were not in control of their actions at the time of the offence and have no memory of the events which occurred. Such a state having been brought about by other means would cast doubt on the *mens rea* requirement for criminal liability and exculpate, but plainly the law cannot permit the advance of such an argument in the case of intoxication. Instead, the bar for intoxication's relevance at the liability stage is set very high, with the result that it is in almost all cases a matter dealt with at sentencing (Dingwall, 2006).

The expansive body of literature dealing with intoxicated offending contains relatively little empirical research, and that more commonly conducted with mock jurors or participants without legal background. Studies of the decision-making processes behind judgments of intoxicated offenders examining the thinking of those occupying active roles within the criminal justice system are comparatively rare. This can be attributed in part to their general inaccessibility as research subjects, but, perhaps more importantly, the vast majority of sentencing decisions are made without written record of the reasoning behind them (Ashworth & Roberts, 2013), such that it is impossible to discover after the fact whether intoxication was a relevant factor in consideration and, should it have been, whether it was determined to aggravate or mitigate offending.

Whilst allowance is made for the fact that intoxication may guide judgment in respect of available treatment disposals (Padfield, 2011), sentencing guidelines issued by the Magistrates' Association include intoxication as an aggravating factor (Sentencing Council, 2017). However, the impact of this is not always discernible in observed sentencing practice. In the example of burglary offences, Irwin-Rodgers and Perry (2015) determined a slight but discernible tendency for intoxication to mitigate. The 2014 Crown Court Sentencing Survey (Sentencing Council, 2015) indicated that, in the case of Domestic Burglary, the offender having been intoxicated is commonly considered to be an aggravating factor, but, although associated with a greater likelihood of receiving a custodial sentence, those sentences tended to be shorter than average.

It would be fair to say that alcohol intoxication facilitates offending (Felson & Staff, 2010; Hore, 1988). People are more likely to act irresponsibly when drunk (Field, Wiers, Christiansen, Fillmore, & Verster, 2010). This is both common knowledge and, in many cultures, common experience. Yet the law is concerned with the punishment of

responsible actors for their choices. If a defendant argues that they would not have committed the act in question had they not been intoxicated, they raise the possibility that they were not wholly responsible and that any punishment should be moderated on that account.

The law circumvents this question by applying the logic of prior fault: if irrationality at the time of the offence is the consequence of an earlier, rational choice, that earlier choice can be used in place of the *mens rea* requirement. In the case of intoxication, this choice is the voluntary act of first becoming intoxicated - the sober man attracts blame by virtue of having opened the door to drunkenness. It is of no account whether the state of inebriation ultimately reached was originally intended, it is the first choice to drink which inculcates.

Crucially, this choice must be voluntary, as the law determines it, and this determination is governed almost entirely by considerations of compulsion and recklessness. Compulsion because compelled action is *ipso facto* involuntary. Recklessness because intoxication is held to be voluntary when the substance which was taken is, as per *R v. Hardie* (1984), one generally understood to have the potential "to cause unpredictability of aggressiveness" (p. 70). To consume a substance in the reasonable awareness of such potential imbues the act with an inculpatory recklessness with regard to the possible consequences.

Yet viewing intoxication law through the lens of volition presents a significant difficulty when dependency is added into consideration. 22% of arrestees test positive for alcohol (Deehan, Marshall, & Saville, 2002), but, given the swift metabolism of alcohol, a positive test is likely only in the case of very recent or heavy drinking (Bennett & Holloway, 2001), and it is probable that this underestimates the proportion of arrestees with alcohol abuse issues. Figures compiled by Her Majesty's Inspectorate of Prisoners for England and Wales (HMIP, 2015b) indicate that almost one in three offenders arriving in prisons self-report having some form of alcohol problem.

By virtue of their frequent consumption of alcohol, the alcoholic cannot claim to be in ignorance of its potential effects, and has demonstrated a repeated recklessness with regard to such consequence. However, alcohol dependency may serve to undermine the idea of intoxication being voluntary, inasmuch as an act is only truly voluntary if it is within the power of the actor to withhold it. Compelled action, as in the case of crimes committed under duress, is not held to the same account under the law as action freely

taken (Arnold, 2001). Not only is addiction characterized by compulsion to seek and consume drugs, but the alcoholic is moreover genuinely under threat of harm from sobriety, as alcoholic withdrawal is potentially fatal (Hall & Zador, 1997).

In contrast, a teetotaler with no personal experience of alcohol's effects might on that basis argue against any recklessness on their part in choosing to become intoxicated, having no reasonable anticipation of reacting negatively. In both cases, there are substantive factors which could arguably influence the synthesis of judgments. A casual drinker who consumes alcohol recreationally, by contrast, has neither claim to hand - their intoxication is both voluntary and knowingly reckless.

The notion of intoxicated defence is not particularly popular with jurors. In his 1998 study, Stephen Garvey outlined some of the features emerging from South Carolina's Capital Juror Project, in which interviews were conducted with 153 jurors who had been involved in a total of 41 US capital murder trials. Fewer than one in five jurors reported considering intoxication at the time of the offence to be a mitigating factor. Moreover, far from addiction lending explanation to intoxication, being either alcoholic or otherwise drug dependent was taken to be, in and of itself, an aggravating factor.

In their 2006 study, Tombs and Jagger explored the sentencing behaviour of Scottish justices when considering borderline decisions, noting that the tendency towards an "overarching retributivism" (p. 803) in the thinking behind such decisions often stood in contrast to the sentencers' own perceptions of the inefficacy of harsher sentencing. They concluded that "this retributivism was without proportionality in so far as it was directed at the offender rather than proportionate to the offence" (p. 803).

Sentencing decisions are ideally conceived to result from the balancing of all relevant factors, each given its due weight and accounted for in a linear additive fashion, and sentencing guidelines are developed with a view to directing this process. However, there is a great deal of evidence to suggest that the majority of sentencing decisions are drawn together through an 'instinctive synthesis' (Hutton, 2013) of the pertinent factors and rely extensively on specific cues to judgment (Dhimi & Ayton, 2001). Such a heuristics-based approach to decision-making has been observed across many different high-information, low-resource contexts (Newell, Weston, & Shanks, 2003; Rieskamp & Hoffrage, 2008), and this is no less true in the case of weighing criminal sentencing decisions (von Helversen & Rieskamp, 2009).

Konečni and Ebbesen (1984) draw from their study of US judge's bail decisions that

"the judges' actual strategy - as opposed to the espoused one - is exceedingly simple and takes very few factors into account", adding that these few factors "are different from those that the judges claim they take into account and that they should take into account" (p. 11). Similarly, Dhimi (2003) observed bail decisions made by judges over a four-month period in two London Courts and established that over 95% of those decisions could be predicted on the basis of three or fewer pieces of information unrelated to the nature and seriousness of the offence.

Yet the risk attached to such strategies comes in part from the possibility which exists for relevant factors to be either left out of consideration entirely, or eclipsed by other cues to judgment with greater perceived validity. This tendency to overlook unanticipated features may help to explain why certain mitigating factors can be discounted in the event that a defendant fits a stereotypical profile and are only drawn into consideration if that stereotype is confounded (Barnett, Brodsky, & Davis, 2004).

Link and Phelan (2014) argue that stigma surrounding mental abnormality is driven by fear rather than reason, motivated in particular by perceptions of uncontrollability and dangerousness. This perhaps goes some way towards explaining the finding that stigma surrounding conditions such as schizophrenia, depression or dependence can increase when neurobiological models are introduced in explanation (Pescosolido et al., 2010). In a criminal justice context, however, the picture becomes less straightforward. Whilst biogenetic explanations for mental disorders are positively associated with perceived dangerousness, they are also negatively associated with perceived blameworthiness (Kvaale, Gottdiener, & Haslam, 2013). Clearly, these two influences point in different directions when considering appropriate criminal sanction.

We were interested in examining the extent to which perceptions of voluntariness in intoxication might be modified by the motivating factor of alcoholism, and moreover whether reasonable naivety over intoxication may help it to function as a mitigating factor in sentencing. We anticipated that, in keeping with sentencing guidelines, intoxication would be taken as an aggravating factor in the case of the casual drinker. However, we theorized that the credible ignorance of potentially negative consequences might undermine perceptions of recklessness in intoxication on the part of the inexperienced drinker, whilst the consumption of alcohol on the part of the alcoholic may be considered less than wholly voluntary. In both examples, there is a reason to question the factors contributing to the aggravating nature of intoxication, opening the

door to the possibility that it may actually serve to mitigate the seriousness of offending.

Method

Participants. A total of 290 active and retired Magistrates, invited via the Magistrates' Association website and by direct invitation, took part in this survey (131 Male, 137 Female, 22 withheld). Broadly in line with national figures, the majority (55.2%) of Magistrates participating in this study were between 61 and 70 years of age. Some participants were excluded from portions of the analysis for reasons given below.

This study was conducted in accordance with the British Psychological Society's Code of Ethics and Conduct. Informed consent was collected in advance and all respondents were debriefed and given the opportunity to withdraw their responses following participation. The study protocol was approved by the Research Ethics Committee of the University of Sussex.

Design. This was a mixed 2 (Intoxication) by 3 (Relationship) design. The Intoxication condition varied the sobriety of the offender at the time of the offence, offering that he was either Drunk or Sober. The Relationship condition varied the defendant's past relationship with alcohol, stating that he was either an Alcoholic, a Casual drinker or a Teetotaler (the offence in question having taken place on the occasion of his first alcohol consumption).

This study therefore consisted of six conditions:

Drunk Alcoholic

Sober Alcoholic

Drunk Casual

Sober Casual

Drunk Teetotal

Sober Teetotal

Procedure. The survey was hosted on the Qualtrics platform (Qualtrics, Provo, UT) and accessible via url. All participants were informed that they would initially be presented with a fictional criminal sentencing scenario and asked to decide on an appropriate sentence. The scenario was as follows:

Peter is 22 years old and has no previous convictions.

Peter was invited to join some friends at a pub on a Friday evening. At closing time, a fight broke out on the crowded street outside the pub. Although it is unclear who started it, several bystanders were injured by flying projectiles and witnesses have confirmed that Peter was one of those seen to throw a glass bottle during the fight. He was one of several people arrested at the scene. Peter pleaded 'not guilty' to a charge of Affray [Public Order Act, s. 3].

Peter has now been found guilty at trial, with the following factors contributing to the seriousness:

- offence occurred outside a pub at closing time;
- fight involved thrown objects;
- conduct caused serious risk of injury;
- bystanders were injured.

Respondents were additionally guided in this task with the information that current sentencing guidelines would suggest a custodial sentence of between 6 and 26 weeks. All participants were then asked to indicate, on a sliding scale of 1 to 26 weeks, how many weeks' custody they would consider appropriate, given the facts of the case as they had been presented. Having decided on this initial 'anchor' sentence, they were subsequently presented with additional information on potentially mitigating or aggravating features. Each respondent was informed that, on the basis of the evidence they had heard at trial, they had been satisfied that the information presented was true. The additional factors presented for consideration in sentencing are shown in Table 5.1.

Table 5.1 - Additional factors presented for consideration in sentencing.

Condition		
Relationship	Intoxication	Additional information
Teetotaler	Drunk	Peter is a teetotaler (he abstains from drinking alcohol). Peter was drunk at the time of the offence (this was the first occasion on which he had consumed alcohol).
	Sober	Peter is a teetotaler (he abstains from drinking alcohol). Peter was sober at the time of the offence.
Casual	Drunk	Peter drinks alcohol occasionally. Peter was drunk at the time of the offence.
	Sober	Peter drinks alcohol occasionally. Peter was sober at the time of the offence.
Alcoholic	Drunk	Peter is an alcoholic. Peter was drunk at the time of the offence.
	Sober	Peter is an alcoholic. Peter was sober at the time of the offence.

Participants were then invited to adjust their original sentence, within the same bounds of 1 to 26 weeks' custody, in light of this additional information. Once participants had chosen to increase, decrease or leave unchanged their original sentence, several follow-up questions were presented in order to probe the underlying rationale for the decision. Firstly, respondents were explicitly requested to provide the reasoning behind their decision. Secondly, they were presented with the five principles of justice as laid out in the Criminal Justice Act 2003 and asked to select those which were at the forefront of their consideration in making their determination. If more than one principle was selected, participants were then asked to rank them in order of relevance to their deliberation. Thirdly, all respondents were asked to indicate on a sliding scale how likely they thought it was that Peter would go on to commit further crimes in future.

Finally, all respondents were given the option of suspending Peter's custodial sentence in favour of a community order, with a view to facilitating his attending a residential treatment facility. Those who chose to suspend Peter's sentence were asked to indicate for how long they felt his suspended sentence should last, on a sliding scale between 1 and 24 months.

Measures and analyses. Decision rules for participant exclusion were applied in common with the studies presented in the preceding chapters with regard to percentage

and odds ratio calculations (see page 48). Ten participants offered the minimum possible sentence of one week during the initial sentencing phase and were therefore excluded from analysis of sentence reduction odds. Eight of these respondents subsequently increased their initial sentence by more than 300% ($M=1113\%$, $SD=409\%$) and by application of the same decision rule employed in Chapter 3 (see page 67) were excluded from analysis in percentage terms. Similarly, any respondents who opted for the maximum possible sentence of 26 weeks at the initial sentencing stage were prevented from increasing the sentence at the following stage. 12 respondents met this criterion and were excluded from analysis of odds of sentence increase. For these reasons, the number of participants in each condition varied between tests.

Primary analyses were conducted in terms of likelihood of sentence change. Complimentary analyses were additionally conducted in terms of percentage change in sentence.

Bayes Factors were calculated employing prior probability distributions as outlined in Appendix J on page 187. The relative frequency and importance of principles under consideration in sentencing decisions were contrasted between conditions and with participants' pre-experimental ratings. Participants were additionally given the opportunity to self-report the thinking behind their sentencing decisions in a text-based free answer, responses to which were coded for statistical and thematic analysis. Statistical measures were not calculated where, due to small or poorly balanced sample sizes, power analyses indicated only a marginal possibility of detecting even a large effect.

Results

We were interested in determining how the defendant's relationship with alcohol and state of intoxication at the time of the offence informed decisions over their degree of criminal responsibility, and moreover the extent to which these two interacted in guiding sentencing decisions. To this end, we asked Magistrates to consider a criminal sentencing scenario. Using a 2 (Intoxication) x 3 (Relationship) design, Magistrates were provided with additional information which varied the nature of the defendant's relationship with alcohol and their state of intoxication at the time of the offence.

At the initial sentencing phase, Magistrates used the full range of sentences available to them. Mean initial sentence was 14.5 weeks ($SD=5.3$; $N=290$). Following the

introduction of potentially mitigating or aggravating factors, we sought to determine the impact of Relationship and Intoxication on percentage change in length of custodial sentence. The data in the Relationship conditions exhibited homogeneity of variance [$F(2,279)=0.8, p=.46$], but were not normally distributed [Teetotal $D(94)=0.47, p<.001$; Casual $D(95)=0.41, p<.001$; Alcoholic $D(93)=0.46, p<.001$]. The data in the Intoxication conditions exhibited heterogeneity of variance [$F(1,280)=7.6, p=.006$] and were not normally distributed [Drunk $D(145)=0.37, p<.001$; Sober $D(137)=0.44, p<.001$]. For these reasons, specific group contrasts subsequent to the initial interaction analysis adopted non-parametric methods.

A 2-way independent ANOVA indicated a non-significant main effect of Relationship on percentage sentence reduction outcome [$F(2,284)=0.13, p=.88$] and a non-significant main effect of Intoxication [$F(2,284)=0.54, p=.47$]. However, there was a significant interaction effect between Relationship and Intoxication [$F(2,284)=3.4, p=.03$] (see Figure 5.1).

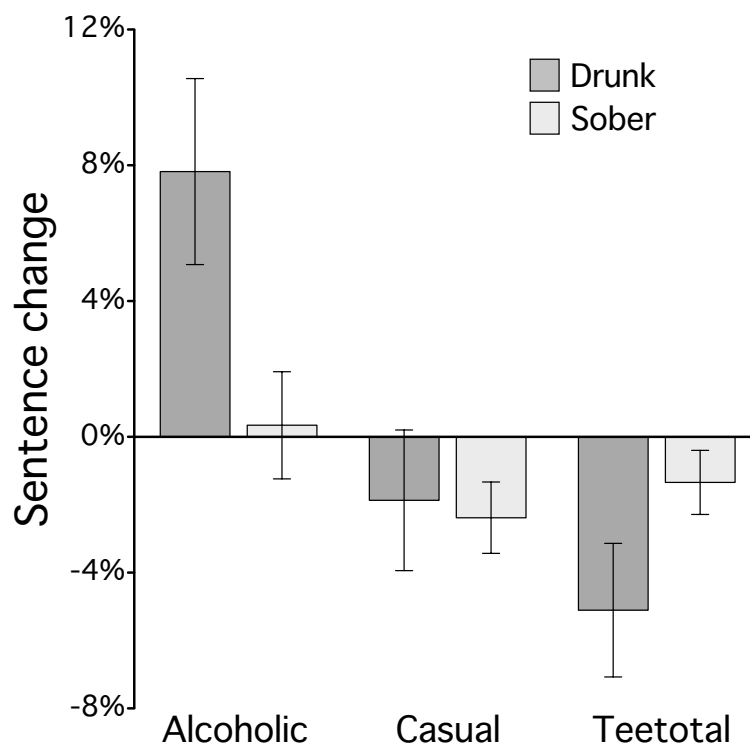


Figure 5.1 - Mean percentage sentence alteration across Relationship and Intoxication conditions.

Intoxication.

Sentence reduction. A reduction in sentence on discovery that Peter was drunk at

the time of the offence was significantly less likely if that information was accompanied by the fact that Peter was an alcoholic (see Table 5.2). Mitigation of criminal responsibility by virtue of drunkenness was significantly more likely in the event that Peter was a casual drinker [OR=8.6, $X^2=5.4$, 95%CI=1.03-71.48, $p=.02$, $B_{H(0, 1.1)}=3.5$] or a teetotaler [OR=11.5, $X^2=7.7$, 95%CI=1.41-94.22, $p=.006$, $B_{H(0, 1.1)}=5.1$].

Table 5.2 - Odds ratio matrix of sentence reduction across Relationship and Intoxication conditions (* $p<.05$, ** $p<.01$, *** $p<.001$).

		Alcoholic		Casual		Teetotal	
		Drunk	Sober	Drunk	Sober	Drunk	Sober
Alcoholic	Drunk	-	0.2	0.1*	0.1*	0.1**	0.2
	Sober	4.2	-	0.5	0.5	0.4	1.0
Casual	Drunk	8.6*	2.0	-	1.0	0.7	2.0
	Sober	8.8*	2.1	1.0	-	0.8	2.0
Teetotal	Drunk	11.5**	2.8	1.3	1.3	-	2.6
	Sober	4.4	1.0	0.5	0.5	0.4	-

A Cochran-Mantel-Haenszel estimate of pooled odds ratio indicated that Peter was ten times more likely to receive a reduction in the length of his custodial sentence in the event that, though intoxicated, he was not additionally an alcoholic [$OR_{pooled}=10.0$, $X^2=11.3$, 95%CI=2.25-44.51, $p<.001$, $B_{H(0, 1.1)}=25.2$]. In fact, it transpires that alcoholism is more commonly associated with an increase in sentence on discovery that Peter was intoxicated at the time of the offence (see Table 5.3).

Table 5.3 - Percentage of respondents altering their initial sentence on discovery that Peter was drunk at the time of the offence.

	Alcoholic	Casual	Teetotal
Reduce	2%	16%	20%
Increase	29%	27%	2%

Sentence increase. Although overall there was an association between being drunk at the time of the offence and receiving an increase in the length of custodial sentence given, this was not true in all cases. Having been drunk rather than sober at the

time of the offence was associated with a greater likelihood of receiving an increased sentence in the event that the defendant was an alcoholic [OR=8.5, $X^2=9.4$, 95%CI=1.8-40.5, $p=.002$] or a casual drinker [OR=3.9, $X^2=5.3$, 95%CI=1.2-13.0, $p=.02$]. However, there did not appear to be an equivalent effect in the case of the teetotaler, where being drunk meant being slightly less likely to receive an increased sentence than being sober [Teetotal: OR=0.3, $X^2=1.0$, 95%CI=0.03-3.25, $p=.32$].

The drunk alcoholic was equivalently likely to receive an increase in the length of custodial sentence as the drunk casual drinker [OR=1.1, $X^2=0.07$, $p=.80$], but was significantly more likely to receive an increase in the length of their sentence than the drunk teetotaler [OR=18.3, $X^2=12.5$, 95%CI=2.3-146.9, $p<.001$] (see Table 5.4).

Table 5.4 - Odds ratio matrix of sentence increase across Relationship and Intoxication conditions (* $p<.05$, ** $p<.01$, *** $p<.001$).

		Alcoholic		Casual		Teetotal	
		Drunk	Sober	Drunk	Sober	Drunk	Sober
Alcoholic	Drunk	-	8.5**	1.1	4.4*	18.3***	6.0**
	Sober	0.1**	-	0.1**	0.5	2.1	0.7
Casual	Drunk	0.9	7.6**	-	3.9*	16.3***	5.3**
	Sober	0.2*	2.0	0.3*	-	4.2	1.4
Teetotal	Drunk	0.1***	0.5	0.1***	0.2	-	0.3
	Sober	0.2**	1.4	0.2**	0.7	3.1	-

Drunk. Where equivalently intoxicated, the defendant's relationship with alcohol had a dramatic effect on sentencing decisions. Whilst on average the teetotaler and the casual drinker received a reduction in the length of their custodial sentence, the alcoholic was not met with equivalent leniency and more generally received an increase in sentence length (see Figure 5.2). A Joonckheere-Terpstra test revealed a significant trend in the data: leniency in sentencing decreased and reversed in line with prevalence of alcohol history [$\tilde{J}=2667.0$, $z=-3.76$, $r=0.31$, $p<.001$]. Whilst intoxication served to mitigate for the teetotaler, and marginally so for the casual drinker, the intoxicated alcoholic was in receipt of harsher sentencing.

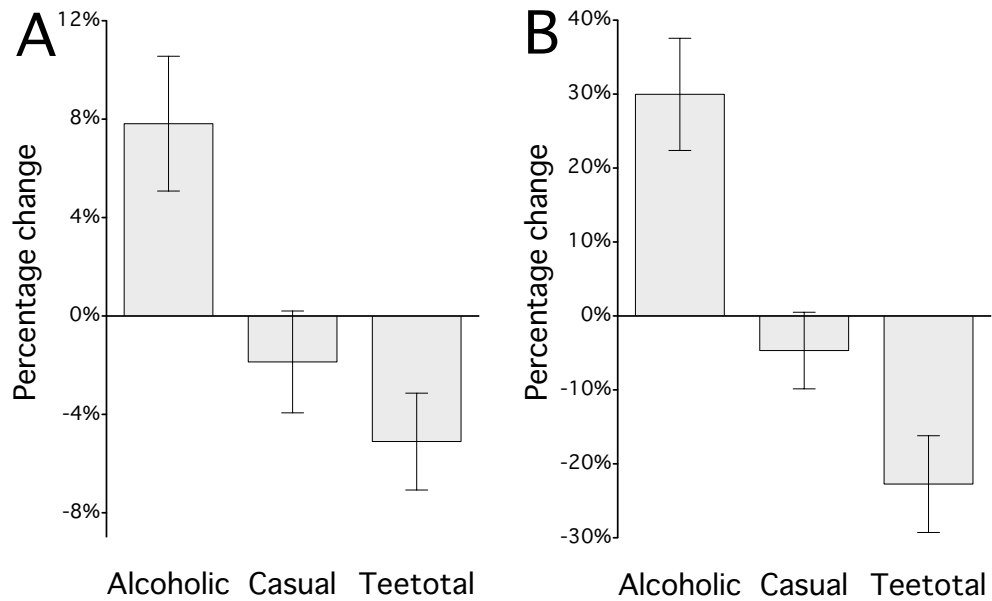


Figure 5.2 (a) Mean percentage change in sentence across Drunk conditions by all respondents ($n=145$; error bars ± 1 SEM); (b) Mean percentage change in sentence across Drunk conditions by just changers ($n=43$; error bars ± 1 SEM).

In terms of raw weeks, this difference between the Drunk conditions was similarly discernible. There was a significant difference in the mean sentence change in weeks between conditions [$X^2=16.2$, $p<.001$] and a Joonckheere-Terpstra test revealed a significant trend in the data: the extent of history with alcohol was associated with reduced leniency and a greater tendency towards an increase in the length of custodial sentence given [$J=4588.0$, $z=4.03$, $r=0.33$, $p<.001$] (see Figure 5.3).

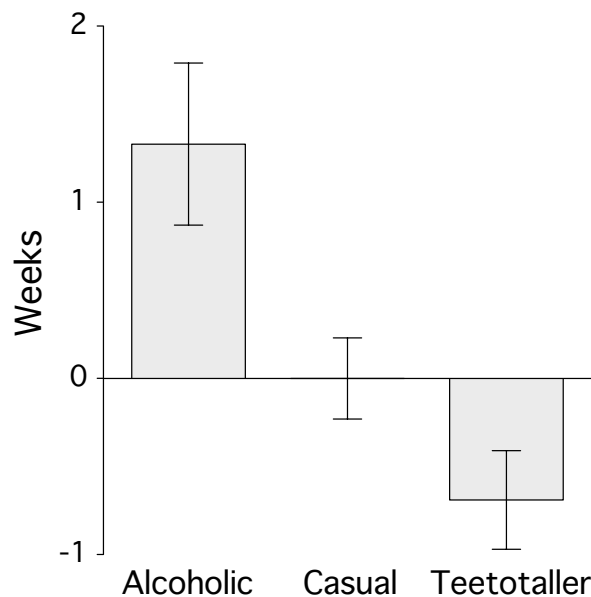


Figure 5.3 - Mean sentence change in weeks across three Drunk conditions ($n=148$; error bars ± 1 SEM).

Sober. Contrasting the Sober groups revealed no equivalent relationships or trends. There was no significant difference in the likelihood of reduction in sentence across the Sober conditions [$X^2=0.43$, *ns*], and the same was true of the likelihood of sentence increase [$X^2=0.59$, *ns*].

It is however noteworthy that, while non-significant, the echo of a similar pattern which existed in the Drunk conditions is discernible across the Sober groups in respect of distinguishing the alcoholic. Though minimal, there is an observable tendency for sentences to be reduced in the event of sobriety being paired with either a casual drinking or teetotal narrative, whilst the overall tendency in the case of the sober alcoholic is a slight increase in sentence (see Figure 5.4).

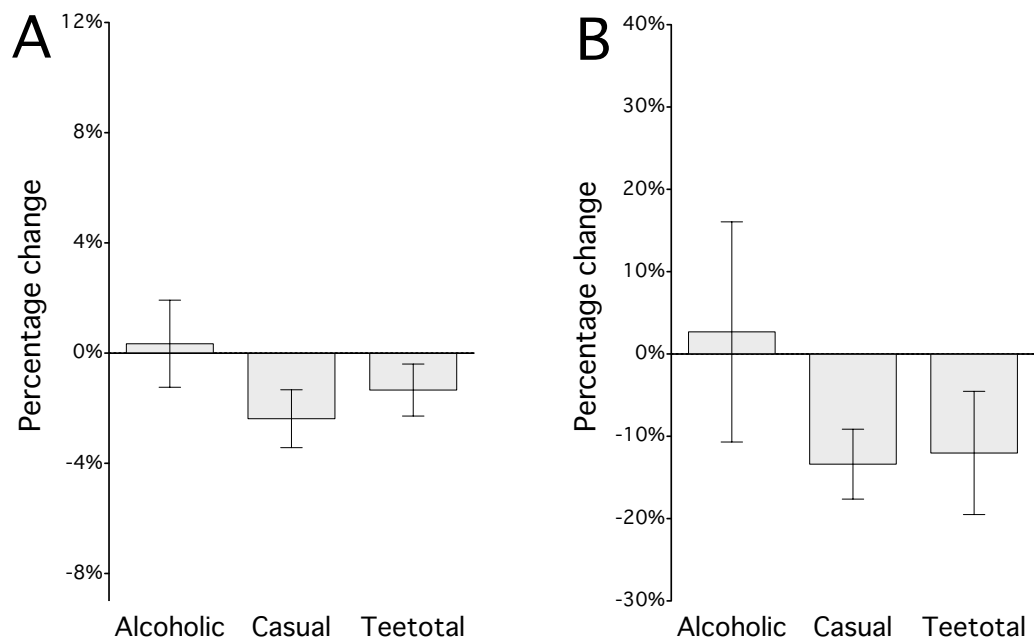


Figure 5.4 (a) Mean percentage change in sentence by all respondents across Sober conditions ($n=137$); (b) Mean percentage change in sentence by just changers across Sober conditions ($n=19$; error bars ± 1 SEM).

The likelihood of receiving either an increase or a reduction in the length of custodial sentence varied as a function of both Intoxication and Relationship. Sentence change was more frequent where the offender had been intoxicated at the time of the offence, but it was their relationship with alcohol which appeared to guide the direction in which such change was made (see Figure 5.5).

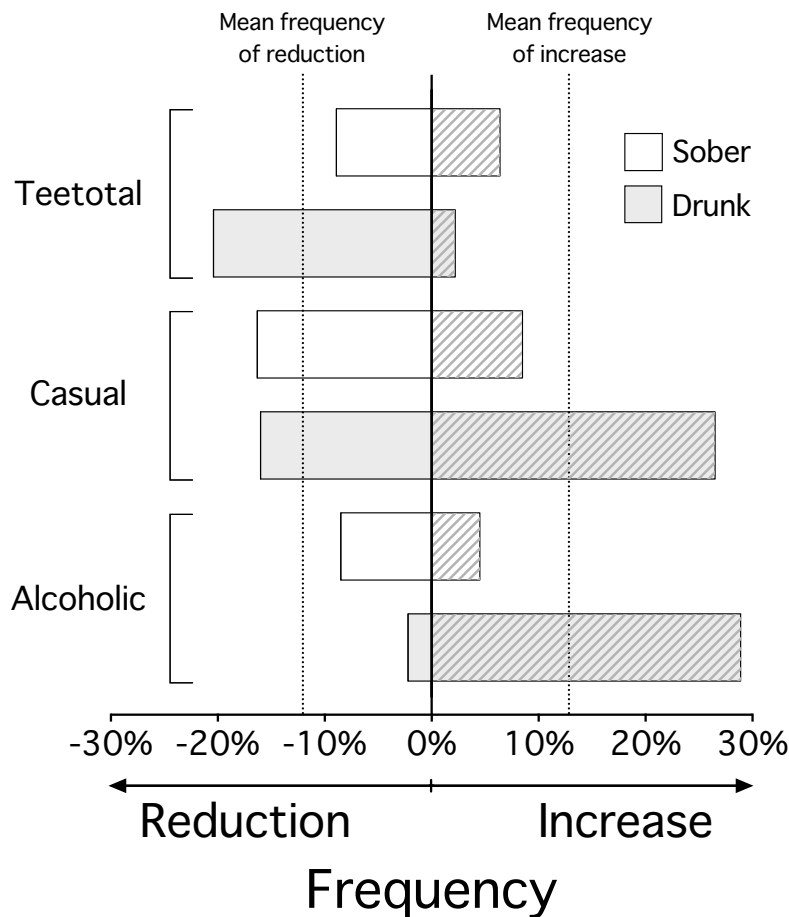


Figure 5.5 - Frequency of sentence reduction and increase across Intoxication and Relationship conditions.

Reoffending estimate. Alcohol dependency was associated with higher estimated likelihood that Peter would reoffend in future. These estimates were only partly moderated by the absence of intoxication at the time of the offence (see Figure 5.6).

Intoxication. In the Casual and Teetotal conditions, there was no indication of variation in reoffending estimate on the basis of intoxication (or lack thereof) at the time of the offence [Casual: $t(97)=-0.66, p=.51$; Teetotal: $t(94)=1.74, p=.09$]. In the Alcoholic condition, by contrast, estimated likelihood of reoffending was significantly higher [$t(93)=-3.43, p=.001$] in the event that the defendant was drunk at the time of the offence [$M=58.9\%, SD=20.8$] than if he was sober [$M=44.5\%, SD=19.9$].

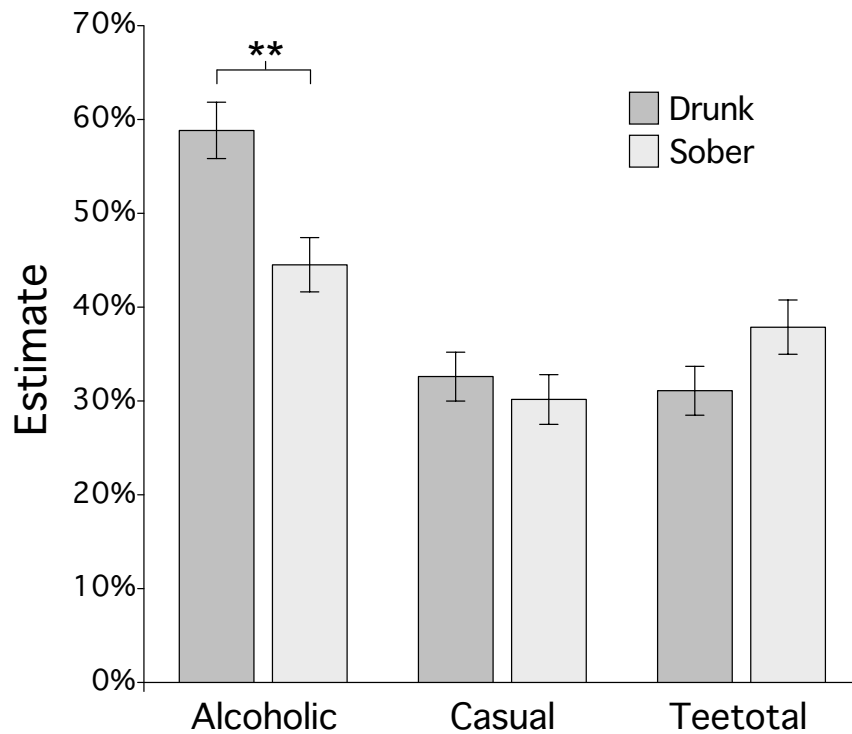


Figure 5.6 - Mean estimated likelihood of future offences by condition ($N=290$; error bars ± 1 SEM; ** $p < .01$).

Relationship. A one-way ANOVA indicated that the defendant's Relationship with alcohol (Alcoholic, Casual or Teetotal) was associated with significant variation in estimates of likely future offending whether the offender was drunk [$F(2,145)=32.0, p < .001$] or sober [$F(2,139)=6.6, p = .002$] at the time of the offence.

Where the defendant was described as having been drunk at the time of the offence, the estimated likelihood of future offending was higher in the Alcoholic condition [$M=58.9\%$, $SD=20.8$] than in either the Casual [$M=32.6\%$, $SD=18.6$] or the Teetotal [$M=31.1\%$, $SD=18.3$] conditions. Additionally, even where the defendant is described as having been sober at the time of the offence, the fact of being an alcoholic is associated with a higher estimate of future reoffending [$M=44.5\%$, $SD=19.9$] than either the casual drinker [$M=30.2\%$, $SD=18.4$] or the teetotaller [$M=37.9\%$, $SD=19.8$].

Willingness to treat. Participants were presented with the opportunity to suspend the custodial sentence they had given in favour of a Community Order and a treatment programme and over 90% opted to do so. However, the rate at which the opportunity to suspend the sentence was rejected varied across conditions. Whether drunk or sober, the alcoholic was more likely to be retained in custody (see Figure 5.7). The sober alcoholic

was three times as likely to be retained in custody than either the sober teetotaller or the sober casual drinker [$OR_{pooled}=3.0$, 95%CI=1.1-8.2, $X^2=4.2$, $p=.04$].

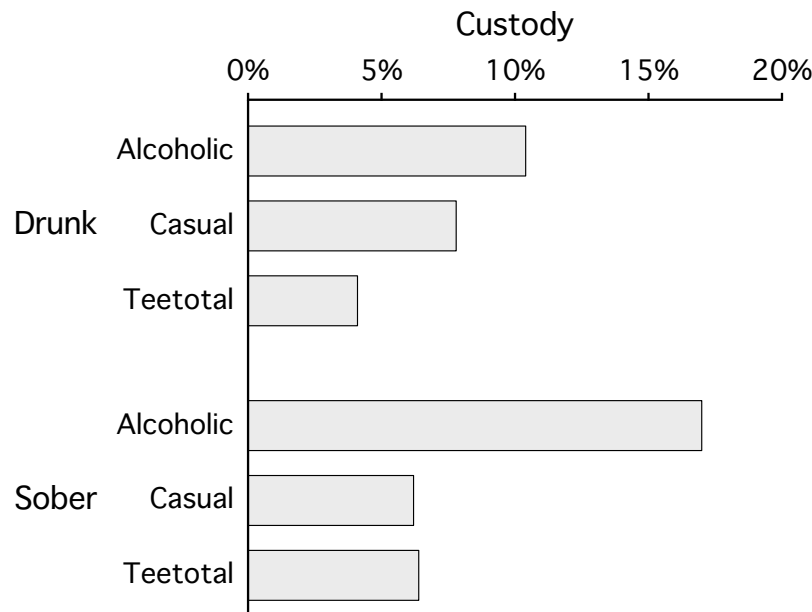


Figure 5.7 - Percentage of respondents refusing Community Order across Intoxication and Relationship conditions.

So whilst the sober alcoholic sees little change to the length of their custodial sentence in respect of their condition, they are also less likely to see that sentence suspended in favour of a community order and treatment.

Principles. The principle of justice cited most frequently as having been at the forefront of consideration in sentencing determinations was Punishment (see Table 5.5). Almost nine out of ten respondents indicated this to have been a significant factor in their thinking. This was followed by Protection, offered in three-quarters of instances, whilst the Reduction of crime was relevant to just over two-thirds of sentencers. Fewer than a quarter of participants offered Rehabilitation to have been important in reaching their decision, whilst Reparation featured least frequently amongst the principles cited, mentioned only 7% of the time.

Table 5.5 - Frequency with which the five principles of criminal justice are cited in sentencing decisions.

Principle	<i>n</i>	%
Punishment	253	87.2
Protection	219	75.5
Reduction	200	69.0
Rehabilitation	62	21.4
Reparation	20	6.9

Just 9% of participants ($n=27$) offered that only one of the five principles was at the forefront of their consideration when making their decision. The remaining 91% of respondents ($n=263$) selected two or more principles and were subsequently asked to rank them in order of relevance.

The frequency with which the principles were cited as being a factor at the forefront of consideration did not vary in line with the defendant's relationship with alcohol (see Figure 5.8).

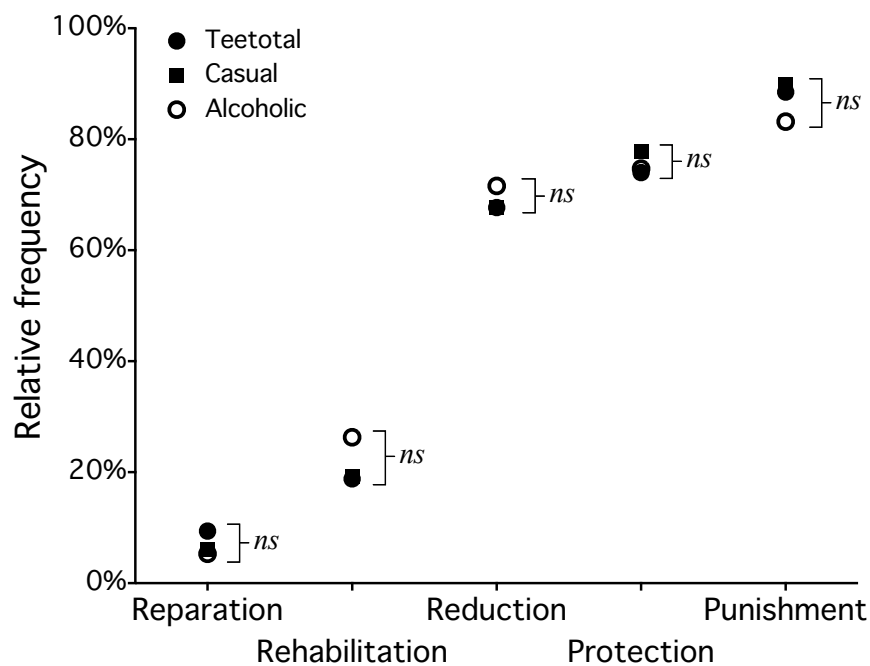


Figure 5.8 - Frequency with which the principles of justice were cited as factors in sentencing decisions across Relationship conditions.

In contrast, there was some variability in the frequency with which the principles were cited in line with the defendant's state of intoxication at the time of the offence (see Figure 5.9). Rehabilitation was offered as a factor in sentencing significantly more

frequently when the defendant was drunk [$X^2=4.4$, $p=.02$].

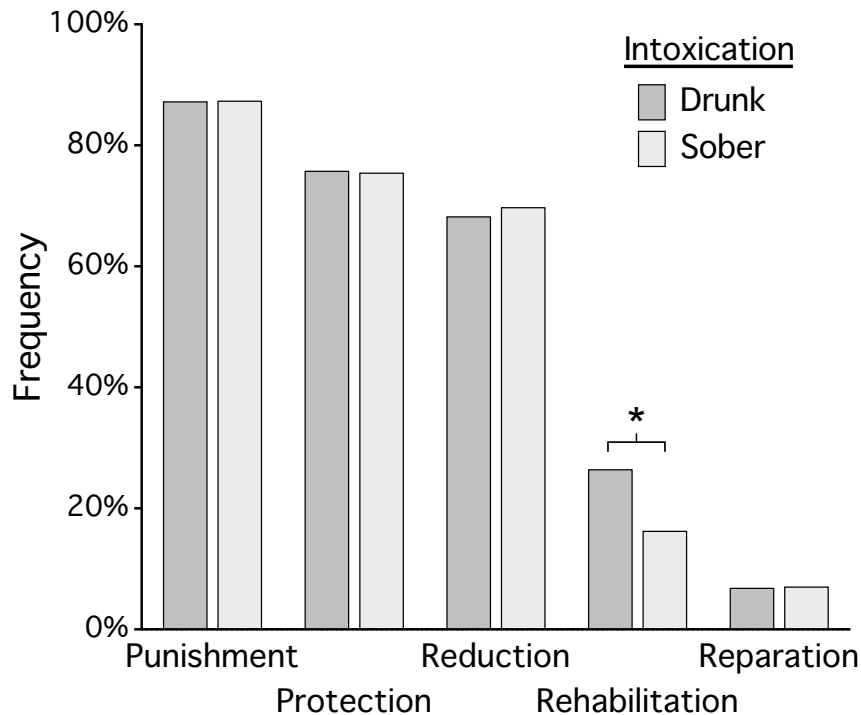


Figure 5.9 - Frequency with which the principles of justice were cited as factors in sentencing decisions across Intoxication conditions (* $p<.05$).

Specifically, participants offered Rehabilitation as having been a factor at the forefront of their consideration more frequently in the event that Peter was both alcoholic and drunk at the time of the offence. Whilst there was no indication that intoxication at the time of the offence impacted the frequency with which Rehabilitation was cited in the case of either the teetotaller [$X^2=0.2$, ns] or the casual drinker [$X^2=0.4$, ns], it was cited significantly more frequently as a factor in consideration in the case of the alcoholic [$X^2=6.3$, $p=.01$] (see Figure 5.10).

Addiction and intoxication in combination were also associated with a reduction in the frequency with which Punishment was cited as a principle component in deliberations (see Figure 5.11). Whilst this variation was not statistically significant [$X^2=4.2$, ns], it is noteworthy that Punishment is cited with greater frequency when the offender was intoxicated at the time of the offence in both the Teetotal and Casual conditions, whilst this relationship is reversed in the event that they are an alcoholic.

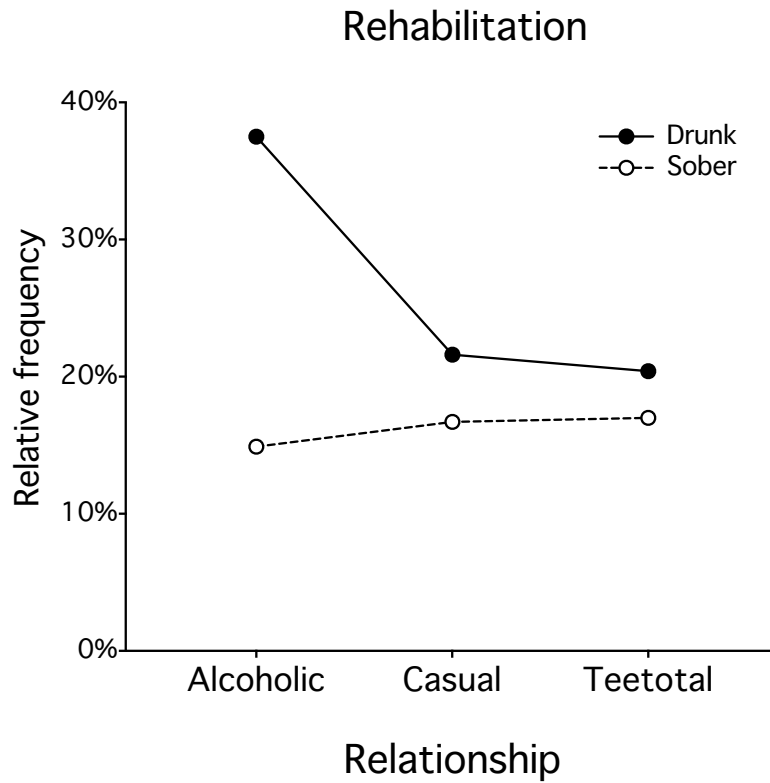


Figure 5.10 - Relative frequency of Rehabilitation being cited as a significant consideration in sentencing decisions.

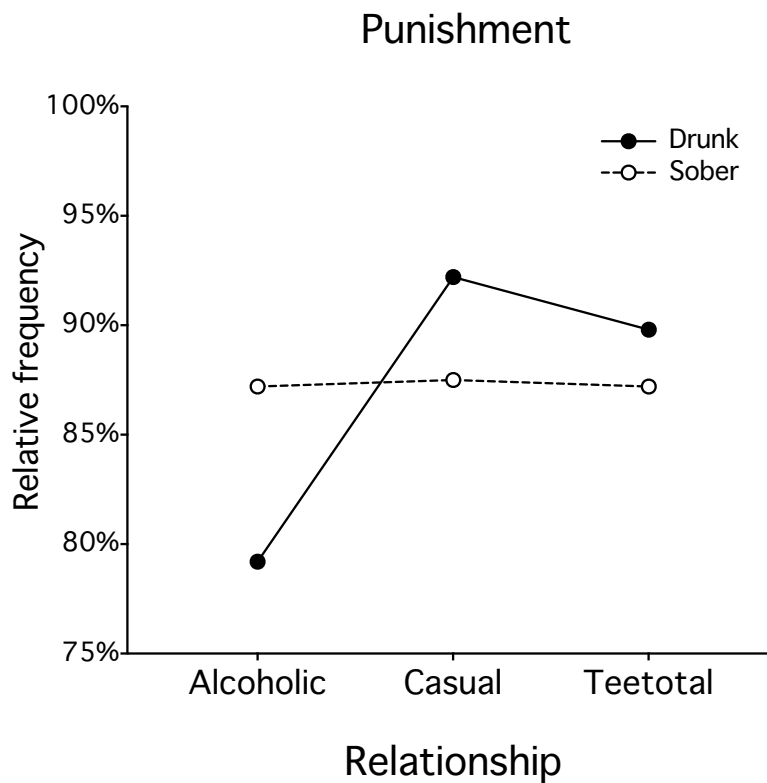


Figure 5.11 - Relative frequency of Punishment being cited as a significant consideration in sentencing decisions.

Thematic analysis. In order to probe the thinking behind Magistrates' sentencing choices, all participants were asked to share the reasoning behind their decisions using a free-text response. These responses were coded for statistical and thematic analysis, revealing the factors which emerged most frequently as having underpinned sentencing decisions. Selected examples of the responses offered are presented in Table 5.7 on page 146.

Previous convictions. There was a significant variation in the degree to which mention of Peter having no previous convictions was associated with a reduction in sentence. In the Casual and Teetotal Relationship conditions, roughly half of all those offering a lack of previous convictions as a component at the forefront of their consideration in sentencing reduced their sentence. In contrast, not a single respondent in the Alcoholic condition who offered this as a factor in their thinking did likewise (see Table 5.6). Despite being explicitly stated in sentencing guidelines as a basis for mitigation, Peter's lack of previous convictions was associated with a much greater likelihood of receiving a reduction in sentence in the event that he was not an alcoholic [$OR_{pooled}=35.4$, $X^2=17.2$, $95\%CI=4.3-291.8$, $p<.001$].

Table 5.6 - Frequency with which a lack of previous convictions is cited as a consideration in sentencing ($n=48$) and associated frequency of sentence reduction.

Age	Teetotal	Casual	Alcoholic
<i>n</i>	11	22	15
Reducing	5	13	0
%	45%	59%	0%

Intoxication. Of those respondents informed that Peter was drunk at the time of the offence ($n=148$), 68% mentioned this fact as a component at the forefront of their consideration in reaching their sentencing decision. Mention of intoxication as a factor in sentencing decisions was associated with a reduced likelihood of receiving a reduction in sentence [$OR=0.3$, $X^2=6.0$, $95\%CI=0.1-0.8$, $p=.01$] and an increased likelihood of receiving an increase in sentence [$OR=3.1$, $X^2=5.6$, $95\%CI=1.2-8.3$, $p=.02$]. Of those informed that Peter was sober at the time of the offence ($n=142$), 42% mentioned this as a factor in their deliberation. However, mention of this as a component in thinking was

not associated with a greater propensity to either increase or reduce sentences [Reduction: OR=0.7, $p=.49$; Increase: OR=1.8, $p=.38$].

Alcoholism. The fact of Peter being an alcoholic appeared to have greater salience in the event that he was drunk at the time of the offence. In the Sober Alcoholic condition ($n=47$), 21% of respondents offered the fact of alcoholism to have featured in their sentencing considerations, as against 44% who offered the same in the Drunk Alcoholic condition ($n=48$). Of those participants who mentioned alcoholism, only six altered their original sentence, one reducing in each of the two Alcoholic conditions, and four increasing, all of whom were in the Drunk Alcoholic condition.

Table 5.7 - Selected factors offered by Magistrates as considerations in sentencing decisions.

Response	Intoxication	Relationship	Sentence change
Alcoholism irrelevant			
"If he wasn't drunk alcoholism is irrelevant."	Sober	Alcoholic	14 weeks unchanged
Intoxication irrelevant			
"The fact he was drunk has no bearing on the matter it is the offence which has to be considered."	Drunk	Alcoholic	6 weeks unchanged
Suggestion that alcoholism excuses drunkenness			
"There's no reason to change the term given he was drunk at the time as we've heard there isn't an alcohol problem."	Drunk	Casual	10 weeks unchanged
Being sober aggravates			
"He was sober and would have been more aware of his involvement."	Sober	Teetotal	12 weeks increasing to 14
"Being sober he was in control of his emotions, behaviour and decisions."	Sober	Casual	20 weeks increasing to 22
"He was sober when he took part and was well aware of the risk of serious injury."	Sober	Alcoholic	20 weeks increasing to 21
"Although alcohol is an aggravating factor it is just as bad that his decision making was not impaired and he did this in a sound mind."	Sober	Teetotal	12 weeks unchanged
"It could be said that being sober makes the crime even worse."	Sober	Casual	20 weeks unchanged
"He was sober so would have been more aware of his actions and the consequence of them."	Sober	Teetotal	12 weeks unchanged
Lack of previous experience with alcohol mitigates			
"The events could be judged out of character considering his typical sobriety."	Drunk	Teetotal	18 weeks reducing to 12
"As a teetotaler previously he had no knowledge as to how alcohol would affect his behaviour and therefore his culpability is somewhat mitigated."	Drunk	Teetotal	12 weeks reducing to 6
"The first drinking occasion is mitigation."	Drunk	Teetotal	12 weeks reducing to 11
Lack of previous experience with alcohol doesn't mitigate			
"Voluntary intoxication is an aggravating factor so cancels out any possible mitigation that he may have acted out of character."	Drunk	Teetotal	20 weeks unchanged
"He was still drunk and would have realised that he had drunk too much."	Drunk	Teetotal	14 weeks unchanged
"The fact he was drunk for the first time has little or no bearing on the sentence."	Drunk	Teetotal	26 weeks unchanged
"I can assume that he deliberately chose to consume alcoholic drink and continued to do so in which case he must accept the consequences"	Drunk	Teetotal	18 weeks unchanged
Neither alcoholism nor intoxication mitigates			
"being drunk is not an excuse, nor is being an alcoholic."	Drunk	Alcoholic	20 weeks unchanged
"being in drink/alcoholic is no defence."	Drunk	Alcoholic	26 weeks unchanged
Alcoholism aggravates			
"Offence aggravated by alcoholism not just a one-off young over-enthusiasm after a casual drink with friends."	Drunk	Alcoholic	6 weeks increasing to 12
Balancing of dependency and intoxication as factors			
"He is an alcoholic which may mitigate the offence but equally being drunk is an aggravating feature which cancels out the alcohol abuse matter."	Drunk	Alcoholic	16 weeks unchanged
"Being drunk aggravates offence, being an alcoholic could be mitigating, so no change to sentence."	Drunk	Alcoholic	12 weeks unchanged
"Aggravating factor voluntary intoxication. Mitigating addiction to alcohol"	Drunk	Alcoholic	12 weeks unchanged
"Whilst being drunk is an aggravating factor being an alcoholic is an illness."	Drunk	Alcoholic	16 weeks unchanged
"Normally the fact that he was drunk would cause me to think of an increase. I did not increase the sentence because he is an alcoholic."	Drunk	Alcoholic	12 weeks unchanged
"Being drunk is no mitigation. That he is an alcoholic, well it is mitigation, but not, in my mind enough to reduce the length of time served."	Drunk	Alcoholic	18 weeks unchanged

Discussion

In keeping with expectation, there is clear indication in our results that Magistrates commonly take intoxication as an aggravating factor in offending, although it would be unreasonable to suggest consistency in this regard. More unexpectedly, there is the implication that alcoholism, unrelated to any intoxication at the time of the offence, also serves to aggravate. Where one might have anticipated dependency giving explanation to intoxication, rather, our results indicate that the drunk alcoholic attracts greater ire than either the casual drinker or the teetotaler, be they drunk or sober. Far from excusing drunkenness, it appears dependency renders it all the more inculpatory.

When examining dependency in the absence of intoxication, as in the case of the sober alcoholic, our results echo those observed in Tombs and Jagger (2006): an overarching retributivism, driven by offender characteristics and enacted in spite of self-reported belief that harsher sentencing would do little to prevent future offending. Many of our respondents offered that they considered alcoholism to mitigate to the extent that it balanced out the aggravating feature of intoxication, but this did not translate into sentencing practice. Intoxication in the absence of dependency was treated more leniently in terms of both the likelihood and extent of sentence reduction. Whilst our participants' explanations of their decisions are presented as considering alcoholism as a substantively mitigating factor, this is not borne out in sentencing practice. Greater leniency is forthcoming when intoxication is not accompanied by dependency, whilst dependency, even in the absence of intoxication, serves to block mitigation and even aggravate.

Our focus here was the voluntariness of intoxication, considered in terms of both foresight and compulsion. We found that while sobriety seldom mitigates (and is offered in some instances as an aggravating feature), the impact of intoxication on the extent of leniency varies in line with the nature of an offender's relationship with alcohol.

In keeping with expectation, intoxication is more readily accommodated as a mitigating factor in the event that the offender in question lacked previous experience with alcohol. This accords with the notion that the voluntary nature of intoxication inculcates by virtue of an individual's reasonable anticipation of potential deleterious results. It is the reasonable absence of such anticipation by which the law delineates 'dangerous' and 'non-dangerous' substances with respect to the recklessness of their consumption (cf. *R v. Hardie*, 1985). It is taken that certain substances (alcohol being

among them) are commonly understood in this regard, such that claims of individual ignorance have little bearing. However, the House of Lords decision in *R v. G & R* (2003) suggests that credible naivety on the part of the offender as to potential consequences may undermine the suggestion of recklessness in their actions. Indeed, our own results demonstrate that, where a particular offender is understood to lack personal experience with alcohol, credible naivety prevents drunkenness from aggravating and in many cases proves mitigating. The casual drinker, by comparison, received a mixed reaction from sentencers; though 16% reduced their sentence on learning of the defendant's intoxication, a somewhat greater proportion increased their sentence on the basis of that same information. This may be contrasted with the fact that only a single respondent in 46 felt that the teetotaler's drunkenness aggravated sufficiently to merit an increased sentence.

Analysis of the qualitative responses collected gives clear indication of the contradictory logic being brought to bear here. There is suggestion that, whilst at the same time acknowledging intoxication as an aggravating factor, many appear to consider a crime committed whilst clear-headed and free from the befuddling effects of alcohol to be entirely more serious. In simple terms, there is an acknowledgement that whilst intoxication cannot excuse criminal behaviour, it does permit the understanding of such behaviour having been 'out of character'. Where intoxication itself is determined to be out of character, there is a tendency towards more lenient sentencing. This is very much in keeping with the impression developed in Lightowlers and Pina-Sanchez's 2017 study of Crown Court sentencing practice, which offered that the more severe sentencing attracted by intoxication "is moderated if the offence is deemed an isolated incident" (p. 132).

Yet, whilst this reasoning is repeatedly expressed in the discussion of sentencing rationales, the drunk alcoholic is in general more likely to be in receipt of harsher sentencing than the drunk casual drinker. Both are equivalently likely to receive an increase in the length of custodial sentence, commonly cited as being determined on the basis of intoxication, but the casual drinker is much more likely to receive a reduction in sentence on that same account. In contrast, only a single Magistrate in our sample felt that drunkenness on the part of the alcoholic merited leniency expressed as a reduction in the length of custodial sentence, and then only to the extent of removing a single week from a 16 week sentence.

As we saw in Chapter 2, leniency in respect of addiction can be blocked by virtue of its being seen as a disease of choice, drawing from the perception that all drug dependent individuals must at one time have first begun taking drugs. That this could be seen as a voluntary act and an unforced choice is, if anything, thrown into sharper relief by its contrast with the latter stages of dependency. The compulsive drug-seeking and lack of self-control associated with addiction give at least some licence to the idea that the addict's will is bound by external factors, serving only to make pre-addiction choices surrounding drug-use seem all the more unconstrained by comparison. In this there are echoes of the prior fault logic employed in the case of intoxication, though stretched over a longer timespan. It would seem that, if the drunk behaviour can inculcate by virtue of the sober choice to begin drinking, so responsibility for addicted behaviour can be projected back in time to be placed on the once-sober individual who first began on this path. We might speculate as to whether the application of this logic is scaffolded by the conflation of intoxication and addiction in lay understanding.

In the preceding chapters we developed an impression of addiction as blocking mitigation - preventing the extension of leniency in respect of circumstances which would, if arising from alternate cause, tend to engender it. The present study was designed with the intent of examining short- and long-term prior fault thinking in parallel, with the perhaps misguided expectation that applying both simultaneously was logically impracticable. Against that expectation, it would appear that 'doubling-up' on prior fault can have a cumulative impact on perceptions of culpability. The fact of being addicted, rather than rendering intoxication more understandable, appears instead to aggravate offending in its own right, and all the more so when the offence was committed whilst intoxicated. Many theorists agree that there is a lack of clarity at the heart of intoxication law (Child, 2014; Law Commission, 2009; Mackay, 1990). It would appear that once the additional confounding factor of dependency is also included, some measure of confusion is inescapable.

To be clear, that the Magistrates in our sample exhibited a measure of inconsistency in the logic underpinning their sentencing decisions in the case of intoxicated or addicted offenders serves only to place them in the company of legal scholars into antiquity. The culpability of those rendered insensate through drink is a question which has long vexed theorists and practitioners alike, and our more recent scientific insight into the mechanisms at play has added degrees of complexity to the debate. However,

one intended goal of issuing sentencing guidelines is consistency in sentencing. That the guidelines in their present form are subject to such varied interpretation in the case of addicted and intoxicated offenders gives an indication of how challenging a goal that is. Given that the majority of arrestees test positive for drugs (Holloway & Bennett, 2004), it is arguable that these issues are being addressed in the greater number of cases coming before English and Welsh courts. On the basis of these findings, it is clear that there is scope for greater clarity in the guidance Magistrates receive with respect to intoxication and addiction. At the very least, addressing addiction in sentencing guidelines would have the benefit of distinguishing it in consideration from acute intoxication.

On the basis of our findings, it is clear that perceptions surrounding addiction are influenced by the same logic which informs understanding of intoxication. In a sense this is unsurprising as the two are connected and there is guidance on intoxication where there is none for addiction. More importantly, we have demonstrated that where addiction is specifically differentiated from intoxication, it is nevertheless associated with harsher sentencing overall. There is no sentencing guidance which directs this, leaving only our respondents' developed intuitions as the source of this tendency, yet these intuitions are not revealed in direct questioning. Elsewhere, we have seen Magistrates largely agree that addiction is a disease, reject it as evidence of a lack of moral character, and doubt that punishment can be successful in preventing people from further drug-use (see Appendix B on page 171). In the present study, the rationales Magistrates provided for sentencing decisions were frequently in keeping with these opinions, but the sentencing decisions themselves were less obviously so. Attempting to account for this apparent discrepancy leads to the somewhat surprising possibility that Magistrates' intuitions at sentencing are at odds with their acceptance of the disease model of addiction, rather than in line with it.

GENERAL DISCUSSION

Over the course of four empirical studies, we examined factors influencing Magistrates' perceptions of addiction as a disease and the extent to which it is treated as such when deciding punishment, highlighting the roles of choice and volition. Questions surrounding an individual's control over their behaviour would ordinarily be a significant factor in determinations of criminal responsibility. This is clearly reflected in sentencing guidelines, which include mental illness or disease amongst factors indicating significantly lower culpability for offences (Sentencing Council, 2017). Indeed, in our initial investigation we determined that identical neurological deficits attributed to a cause other than addiction served to mitigate. However, the impression we have developed of addiction's role in guiding judgment is one of complexity and contradiction.

We will begin here by summarizing the results of each chapter, highlighting the major findings, before turning our attention to the themes which emerged across these studies. In the final section we discuss potential future directions for research in this area.

Overview

Study 1 examined leniency extended in sentencing in respect of neurological deficits stemming from either addiction or a (fictional) disease, together with the extent to which the autogenic or iatrogenic origin of either impacted perceptions of criminal responsibility. We determined that addiction was treated in common with brain disease, but only where perceptions of choice in initial drug-use were confounded. Leniency in respect of neurobiological impairment was blocked when participants were presented with a conventional addiction narrative, but was extended where the initial choice to use drugs was absent from that narrative.

Study 2 built on these findings, varying the aetiology of addiction and disease by presenting additional narratives in which they were presented in tandem. We included variants in which our fictional neurobiological disorder 'Woznicki's' developed in advance of first drug-use and in which it was the consequence of drug-use. We additionally probed the relevance of the timing of initial choice by presenting variants

in which first use took place at either 15 or 20 years of age. That we saw little difference here suggested that perceptions of choice are not necessarily sensitive to the full range of circumstances surrounding that choice. Whilst there was no discernible impact of age, we replicated our initial finding that disease mitigated where addiction did not, with leniency extended in the case of Woznicki's disease and not where identical impairment was attributed to addiction. In our mixed aetiologies, we saw that a combination of addiction and Woznicki's resulted in leniency which fell part-way between the extremes seen when the two were presented in isolation. This was true even where Woznicki's was effectively addiction in all but name, having been described as the consequence of exactly the same history of habitual drug-use as that described in the matched addiction narrative.

In Study 3, we sought to confirm the overarching relevance of initial choice in addiction by replicating the distinction between autogenic and iatrogenic origin which directed judgment in our initial paradigm. We were also interested in further investigating the finding in our original study that the subsequent maintenance of addiction was minimally relevant in determinations of criminal responsibility. To this end, we developed contrasting drug-use histories which involved periods of abstinence and instances of relapse. We found that the autogenic/iatrogenic distinction was only a factor in Magistrates' decision-making where drug-use had been consistent. Periods of abstinence in drug-use history, even where followed by relapse, appeared to overshadow the relevance of the voluntary nature of initial choice. We postulated that the act of curtailing drug-use carries with it the implication of some measure of control having been retained over that use, restoring to the addict a degree of the agency which the iatrogenic origin of their addiction would conventionally deny. When contrasted with the more conventional autogenic narrative, iatrogenic addiction was associated with a greater likelihood of receiving a reduction in sentence, but also with a greater likelihood of receiving an increase in sentence. We speculated that the unconventional nature of iatrogenic addiction prompted reconsideration of relevant cues to judgment where the straightforward autogenic addiction scenario did not. That this process would draw into focus previously ignored factors speaking to either mitigation or aggravation may account for the observation that the same array of information resulted in both sentence reductions and increases.

Study 4 investigated the extent to which addiction could contradict perceptions of

voluntariness in intoxication, whilst also examining the degree to which a lack of previous experience with alcohol might mitigate responsibility for offending whilst intoxicated. We discovered that intoxication could serve to mitigate responsibility for offending in the event that the individual concerned was personally naive to its effects. A similar degree of mitigation was observable in the example of the casual drinker, though this was largely offset by a like proportion of respondents taking intoxication to aggravate. In the case of the alcoholic, by contrast, intoxication served only to aggravate, with addiction seemingly providing little in the way of excuse for alcohol consumption. Moreover, even when sober at the time of the offence, the alcoholic was in receipt of harsher sentencing than either the teetotaler or the casual drinker, regardless of their state of intoxication.

Limitations

Before turning to discussion of the themes which emerged across our studies, there are some limitations which should be noted. Our results were collected online, rather than face to face, so we did not have the opportunity to observe our participants in the act of sentencing. Nor were we able to probe responses with additional qualitative questions beyond those predetermined for inclusion. What additional understanding might have been gained by the presence of a researcher and a measure of discursive questioning had to be weighed against the logistics of sampling. Conducting separate interviews with each respondent would have necessitated limiting the scope of our studies in order to compensate for the additional time taken, and it would have been significantly more challenging to achieve a geographical cross-section of Magistrates. For these reasons, it was determined at an early stage that our specific research questions would be best addressed through the online approach subsequently adopted. One additional factor in our consideration was a desire for genuine answers on sometimes sensitive topics, which we deemed less likely from subjects under direct observation. Allowing our respondents privacy and anonymity in providing their answers was advantageous in this respect.

For similar reasons, we collected limited information with potential to permit identification of individual participants. This had the effect of limiting our ability to probe whether and to what extent our results were driven in part by specific differences. By way of example, amongst the information we opted not to request was the

geographic locality in which they sat as Magistrates. We therefore cannot exclude the possibility that diverging assessments of identical cases were in part influenced by regional variations in judicial perspective. Given the rule of law concerns which the suggestion of inconsistency across regional boundaries necessarily generate, this merits consideration as a potential confounding factor. Whilst these studies were not intended to probe questions surrounding these kinds of inconsistency, it is clear from the wide range of responses we received to each of our initial sentencing scenarios that some measure of inconsistency was in operation at this initial stage, even in advance of confounding factors being introduced. We cannot ascribe this to geography any more than to individual differences in personal experience between Magistrates, but both remain candidates for the attention of future research.

Finally, each of the studies presented here employed a single crime and a single drug. We therefore cannot offer that our results would be reflected in general sentencing practice across all offence types or in relation to all manner of intoxicants. As noted below (see page 161), there is scope for variation of our scenarios in terms of both the nature of the crime committed and that of the drug involved. In particular, we did not investigate what effect switching between legally available and proscribed drugs might have had in our scenarios. Nor can we offer insight into the extent to which our participants' reactions to personal mitigation factors might be subject to attenuation through variation in the features of the crime or the nature of the victim. Such distinctions as may exist here would be particularly beneficial to highlight as, in reality, sentencing is all too frequently concerned with multiple offences committed by poly-drug users.

Emerging themes

Do Magistrates regard addiction as a disease?

Across these studies a complex picture emerges of the regard in which addicted and intoxicated offenders are held. Whilst it is perhaps to be expected that Magistrates may disagree with one another, many appear to act in contradiction of their own expressed opinion. When asked directly whether they consider addiction to be a disease, Magistrates overwhelmingly agree, whilst only a small proportion support the notion that addiction is evidence of a lack of moral character (see Appendix B on page 171). However, our initial empirical finding was of addiction seemingly being considered a

case apart from disease, as leniency which was extended in light of Woznicki's disease was not forthcoming when the same impairment developed through drug-use. We were able to render addiction analogous to disease by removing choice from its development. Offering that initial drug-use had not been voluntary prompted leniency in line with that shown to the offender whose impairment stemmed from Woznicki's. Yet it quickly became clear that this was not as clear-cut as it may at first have seemed.

We saw the apparent difference with respect to addiction and disease again in Chapter 3, where addiction blocked leniency in line with that extended to the Woznicki's sufferer. However, where drug-use had led to Woznicki's disease, greater leniency was extended than where drug-use had led to addiction. This added a complication to our initial assessment, in that it was evidently not solely the fact of choice in initial drug-use which spoke against mitigation. The initial choice to use drugs was the same across the two narratives. Our tentative speculation as to the reason for this difference was that the acquisition of Woznicki's disease implied, or at least was taken by Magistrates to imply, a cessation of drug-use. We considered that perhaps the Woznicki's sufferer might have been accorded some mitigation for having stopped taking drugs. However, the study presented in Chapter 4 did not show a similar effect, as in that scenario the former drug-user was sentenced in similar fashion to the current user. Whether our Magistrate participants felt the defendant was better or worse for the fact of having stopped taking drugs was not evident in their sentencing behaviour. There was a slightly lowered tendency to increase sentences on that account, but abstinence did not appear to be the driving factor behind this.

Yet, in one sense at least, Magistrates do treat addiction as the disease that, when asked directly, they overwhelmingly agree it is. Whilst we saw, across our studies, leniency withheld in the case of addiction, we saw a similar response to Woznicki's disease in Chapter 2 when choice was introduced to the initiation narrative. Whilst the effect was not as pronounced as we saw in the case of addiction, it was nevertheless present. We could not logically draw from this observation that Magistrates do not see 'Woznicki's disease' as a disease, nor would it be reasonable to argue that it represents Magistrates' rejection of the 'disease model of Woznicki's'. In this sense, denying addiction the mitigating power of its associated neurobiological deficits by virtue of choice in its initiation is entirely compatible with it being understood as a disease. What sets addiction apart is not its characterization as something other than disease, but

rather the implicit assumption that it proceeds from a choice. As such, beliefs surrounding the nature and circumstances of that choice have a great deal more to do with defining addiction's status in law than its recognition a legitimate medical condition.

The role of prior fault in sentencing

Prior fault is a mechanism in law by which the offender who claims they lacked the necessary *mens rea* for an offence can nevertheless be held to account by virtue of complicity in having brought about that state. As such, in theory it has no role to play outside the liability stage of criminal proceedings. Nevertheless, it is apparent that its underlying logic guides impressions of culpability in sentencing, as we saw leniency extended when it was made explicit that initial drug-use was involuntary. Where addiction was understood as a voluntarily-contrived circumstance, this was sufficient to prevent sentence reduction of a kind seen when its initiation was involuntary. This seemed straightforward enough, but for the fact that it left open the question of what regard was paid to the years of drug-use which followed. We were then confronted with the fact that the age at which that initial choice was made appeared to have minimal impact on perceptions of individual culpability. Ordinarily, juvenile offending is considered more leniently than equivalent crimes committed by adults. In Chapter 4, we presented scenarios in which the crime was committed in adulthood, but drug-use had begun as a juvenile. Fault was seemingly imported from this initial choice to use drugs without consideration for the age at which it had occurred.

Additionally, whilst we observed in Chapter 2 and then confirmed in Chapter 4 the ability of iatrogenic origin to forestall the application of prior fault logic, this picture was complicated by the introduction of what might be considered standard features of addiction. We saw in Chapter 4 that whilst the continuous drug-user was treated more leniently in the event that their addiction had first developed through circumstances beyond their control, this did not appear to be the case where a subsequent attempt had been made at abstinence. Iatrogenic origin of addiction appeared all but irrelevant in the case of the former addict, despite their neurological deficits being described in identical terms, whilst a period of abstinence followed by relapse appeared to similarly contradict impressions of addiction overwhelming the capacity for restraint.

It is difficult to reconcile these observations. Our initial speculation was that

iatrogenic origin removed responsibility for initial drug-use, and that subsequent use was considered to some degree involuntary by virtue of addiction. The addict would therefore be seen, in this instance, as without blame for their condition. Yet it would seem that evidencing some measure of control over their continued drug consumption by virtue of a period of abstinence serves to contradict impressions of an irresistible compulsion to use drugs. Moreover, as we observed in Chapter 5, there is no suggestion that alcoholism allows associated intoxication to be considered involuntary, implying that whatever power addiction has to excuse drug-taking is, at best, a theoretical consideration not evident in practice.

Nevertheless, our Magistrate participants clearly recognize a variety of compulsion in the addict. Over three-quarters disagree with the notion that people punished for taking drugs are less likely to take them in future (see Appendix B on page 171), suggesting an acceptance of inevitable repeated use despite adverse consequences. This would accord well with their general acceptance of the disease model of addiction and their rejection of the notion that it evidences bad moral character. Yet we saw in Chapter 5 that such compulsion as they recognize in addiction is insufficient to excuse intoxication.

That we see the operation of prior fault logic at sentencing is in one sense unsurprising. It is a logic derived from common intuitions about what is and is not blameworthy. In this sense, it is reasonable to expect its operation wherever blame is being judged. Yet the way we have seen it applied here, across our studies, is not a precise reflection of its function at the liability stage. In this, there is perhaps a clue as to where the balance of interpretation lies. If addiction were understood as an adjunct to intoxication, we might expect to see the operation of prior fault logic in sentencing. By contrast, likening addiction to an acquired disease of the mind would arguably forestall the operation of prior fault logic, as it has little relevance in such cases. A finding of insane automatism or cognitive insanity will not be undermined by the aetiology of the brain state in question. The observation of prior fault logic being applied in the sentencing of addicted offenders could therefore reflect the fact that the conflation of addiction with intoxication has greater import in these judgments than its disease-like neurobiology.

From a neuroscientific perspective, we can say with relative certainty that in some people repeated use of addictive drugs alters brain structure and function, commonly

resulting in a failure of inhibitory control (Baler & Volkow, 2006). From a legal perspective, brain damage leading to impulsive behaviour would ordinarily mitigate criminal responsibility. Linking these two facts together does not rely on an acceptance of the disease model of addiction. Considered in this way, the question of whether or not the Magistrates we sampled consider addiction a disease is all but irrelevant in a criminal justice context. Except, that is, for the small matter of the sentencing guidelines. As they are presently constructed, it is disease or mental illness which mitigates, and the addicted brain state would need to be considered in common with these to do likewise.

The relationship between intoxication and addiction at sentencing

Across these studies, we saw examples of the conflation of addiction and intoxication. In this, perhaps, we see reflected the ambiguity which appears in sentencing guidelines with respect to alcohol and drugs. It is clearly expressed that culpability for an offence is greater if the offender was (voluntarily) under the influence of either, but there is nothing to indicate what 'under the influence' encompasses. If one has 'influenced' one's brain into an addicted state through repeated drug administration, is it correct to say the state is one of continuing to be influenced by the drug?

It is unlikely that this is the intended interpretation of the guidelines, but, that having been said, we saw evidence in Chapter 5 that amongst the Magistrates we sampled there were those who seemingly took this interpretation. Being an alcoholic was sufficient to block leniency which was forthcoming for the casual drinker who committed the same crime in the same state of intoxication, and qualitative responses indicated a blurring of the lines between addicted and intoxicated states (see page 146). In Chapter 4 we saw that some Magistrates felt that past drug-use aggravated offending, even where the addiction it fed had been iatrogenic in origin.

Conversely, in Chapter 5, only 2% of respondents felt that intoxication aggravated offending in the case of the teetotal defendant, despite the fact that the sentencing guidelines include the "commission of an offence while under the influence of alcohol or drugs" (Sentencing Council, 2017, p. 20) as indicating higher culpability. Even the narrowest interpretation of 'under the influence' would have to include the direct, acute effects of consuming alcohol. Yet the vast majority found something in the example of the teetotaller to balance against the aggravating factor of intoxication. Indeed, fully one

in five Magistrates reduced the teetotaler's sentence on learning that he was drunk at the time of the offence, and approaching one in six did likewise in the case of the casual drinker. For the alcoholic, it was 1 in 50.

It does appear counterintuitive that intoxication should sometimes mitigate when voluntary, but fails to do so when some degree of involuntariness is suggested. Yet we saw something similar in Chapter 4, where addiction of iatrogenic origin was more frequently seen as aggravating than that of autogenic origin. It would seem that, where information is limited and available guidance absent or at best ambiguous, judgments can be inconsistent even across identical circumstances.

Should addiction be included in sentencing guidelines?

Intoxication is already included in the guidelines and is clearly stated as a factor indicating increased seriousness, yet we saw in Chapter 5 that there were circumstances under which it inspired greater leniency in sentencing. This serves to illustrate a potential problem with including addiction in the guidelines, even were it possible to specify its generally mitigating or aggravating nature. Even though intoxication is specifically mentioned and directly stated to aggravate offending, there are clearly other factors being taken into account which balance against or supersede this direction. Whilst it is not immediately obvious how this is in keeping with the guidelines as written, in the absence of further insight into how they are interpreted in practice we cannot exclude the possibility that our respondents were acting in a manner consistent with their understanding of them. Without a clear picture of how the guidelines inform judgment in general sentencing practice, it is difficult to predict what effect, if any, even explicit direction on the matter of addiction would have.

Sentencing guidelines have the goal of consistency in sentencing across different courts, but they also have a role to play in individual Magistrates' internal consistency. All of our participants made their decisions in line with their personal intuitions, with reference to the guidelines. Prompting reconsideration of the details by disrupting automatic processing led some to change their minds, but neither their own knowledge nor the guidelines had changed. The only thing which can have changed was their assessment of which facts were more or less pertinent to judgment. The inclusion of addiction in sentencing guidelines would likely prove beneficial in that regard, as it would highlight it as a factor meriting consideration.

We saw across our studies examples of sentencing behaviour which ran counter to intuition. We saw in Chapter 4, for example, that iatrogenic addiction could attract harsher sentencing than autogenic. We observed in Chapter 5 that the alcoholic was more frequently denied treatment than the teetotaler. We found, across our studies, that mitigation in respect of neurological impairment was in part dependent on the historic cause of that impairment.

Clearly, there is scope for opinions to diverge on how to approach these admittedly thorny issues, and it seems reasonable to suggest that this is in part the consequence of common decision-making processes. We can use a limited number of cues to judgment in the event that they conform to a common archetype. If it walks like a duck, and is addicted to heroin, it is likely also a criminal. Where we disrupted archetypical impressions by, for example, introducing an iatrogenic origin of addiction, a greater proportion of respondents increased the length of the sentence they had given than when addiction was, stereotypically, autogenic (see Chapter 4). This suggests a tendency towards reconsideration, perhaps taking in a wider array of factors, when presented with reason to do so. Challenging presumptions has the effect of prompting reassessment. In this way, the mention of addiction in sentencing guidelines would draw it into consideration as a factor. It would also have the distinct advantage of clearly delineating it from intoxication, whilst clarifying its position as separate and distinguishable for 'mental illness or disease'.

Should addiction mitigate or aggravate?

The question of whether addiction should be taken to mitigate or aggravate responsibility may appear to be directly tied to its contentious status as a disease, but our findings would tend to throw that assumption into doubt. It seems clear that the wider circumstances of addiction can promote either leniency or severity in sentencing, and in many cases both simultaneously, despite broad agreement that addiction is a disease. Indeed, whilst those who agreed that addiction is a disease were in general more likely to reduce their sentences in light of novel factors than those who did not, they were also generally more likely to increase them (see page 112). The resulting impression is one of greater subtlety in these judgments than can be captured by the presumptive dichotomy of disease or moral failing.

As outlined in the Introduction, there are two potential routes to mitigation of

criminal responsibility by virtue of addiction. Firstly, compulsive craving may be offered to explain intoxication as having been involuntary, in keeping with Husak's (1999; 2000) likening of addiction to duress. In addition to some of the difficulties Husak outlines with this conception, there is the somewhat limiting factor that this would apply only where offences were committed whilst intoxicated. Denying the voluntary nature of intoxication may permit it to excuse, but only in the tiny fraction of cases in which intoxication was severe enough to conceivably mitigate offending in the first place. Secondly, addiction might promote leniency by virtue of being an acquired brain state with neurologically-driven behavioural consequences. Altered motivation and impaired self-control are common characteristics of the addict which might be advanced to reduce blameworthiness for their actions (Morse, 2017).

One barrier here is that for addiction to inform sentencing, it would first need to be accurately identified. If the guidelines directed addiction be treated in some special way, it would be all but useless in the absence of some further direction as to what should be recognized as addiction. Though we are arguably approaching a reasonable expertise in identifying the relevant neural markers, we are still a long way from any kind of rapid, straightforward test of the kind necessary for *in situ* courtroom categorization. Next to this, perhaps the most relevant tool would be the Diagnostic and Statistical Manual of Mental Disorders (APA, 2013), which specifically excludes 'addiction' as a diagnostic term in part "because of its uncertain definition" (p. 485). We cannot rely on the self-report of addiction, because if it was taken to be aggravating then defendants would take steps to conceal it and if it served to mitigate then the genuine claims would likely be outnumbered by the false.

Given this, it would be advisable to incorporate mention of addiction into the sentencing guidelines without specific reference to its aggravating or mitigating nature. This would highlight it as a factor worthy of consideration in the synthesis of judgment, whilst allowing that judgment to proceed intuitively in line with expertise.

Future directions

There are a number of dimensions along which the studies presented here could be profitably extended. In the first instance, we explored only two drugs: heroin and alcohol. There are any number of others. A drug of the psychostimulant class, such as cocaine, would provide for an interesting comparison. Like heroin, it is illegal, but in its

relationship to criminal behaviour it has more in common with alcohol (Boles & Miotto, 2003). Whereas the narcotic effect of heroin provides little scope for criminal endeavour whilst experiencing its acute effects, cocaine is more akin to alcohol, in that there is some evidence of an increased propensity for criminal behaviour whilst under its acute influence (Miller, Gold, & Mahler, 1991; Chermack & Blow, 2002). Replicating the study presented in Chapter 5 with cocaine as the intoxicant would be one approach to follow in this vein, where it would be interesting to see if the casual cocaine-user's intoxication moved some Magistrates to show similar leniency to that extended in the example of the casual drinker.

Equally, the legal drug we explored was alcohol, but this is not the only legal route to addiction. As outlined in the Introduction (see page 3), the number of illegal drug users who first began using legal, prescription drugs is growing (McCabe et al., 2017). In a disturbingly-high proportion of instances, these drugs will have been legitimately prescribed to them, often while still a juvenile (Lankenau et al., 2012). This has much in common with the form of iatrogenic addiction that we used in our studies, and poses questions surrounding juvenile choice which we were not able to adequately answer here. Amongst these is what measure of excuse is extended to a child who became addicted to opiates by following the instructions of their doctor to take opiates. Given the complex role of choice in the context of addiction, this presents an interesting route of inquiry and merits future study.

Where we attempted, in Chapter 3, to introduce juvenile choice, we found that age of first drug-use appeared all but irrelevant in the terms that we described. Our age manipulation seemed to make a minimal difference to judgments of responsibility, as the offender whose addiction began at 15 was considered in much the same regard as the offender whose addiction began at 20. Whilst our impression of the impact of choice in initial addiction has evolved over the course of these studies and no longer plays an exclusive role in understanding sentencing judgments, it remains clear that it is a powerful determinant. In our first study, the Woznicki's sufferer was blameless for their neurological deficits, yet virtually equivalent leniency was forthcoming in the case of the addict when it was explained that they had no choice in the initiation of their addiction. Clearly, initial choice is important, so the observation that the juvenile status of the individual making that choice seemed of little relevance is somewhat surprising. It would be interesting to probe the point at which the relevance of youth was observable in its

operation. Our age manipulation might be repeated contrasting a 20-year-old's choice with that of a 10-year-old. Whilst a 10-year-old using drugs might seem unlikely, it is by no means unheard of (Gilvarry & McArdle, 2004; McKegany et al., 2005), and an extreme case may elicit a response where an all-too-common one failed to.

We might also legitimately ask what effect variations in the nature of the crime committed might have on judgments. We saw in Chapter 3 that the vulnerability of the victim, though described identically across conditions, was mentioned as a factor in sentencing deliberations with much greater frequency in the Heroin condition. Certainly, a particularly vulnerable victim should be taken into account in determining the seriousness of the offence, but we can only speculate as to which factors mediated its relevance here. Attention was given to a particular offence characteristic more frequently in one instance than another, despite the offence in question being identically described. It can only be offender characteristics which mediate this effect, as it was only this which varied between conditions.

In a sense this is unsurprising, as it is understandable enough to allow an individual's past behaviour to colour perceptions of their present actions. A person's actions may be understood very differently in light of multiple previous convictions, or being of long-standing good character. Yet these are conscious associations in the minds of sentencers, whereas what we observed in our studies does not lend itself well to this interpretation. Rather, there is the suggestion that the entrance of salient factors into conscious consideration is gated by superficially unrelated factors operating outside awareness. Developing future studies with a limited number of potentially salient cues to judgment would allow us to focus in on which *offender* characteristics make it more or less likely that certain *offence* characteristics are considered.

In a broader vein, we have seen multiple examples across these studies sentencing decisions which ran counter to both intuition and prediction. In some cases, it has been difficult to reconcile these decisions with the sentencing guidelines from which they would ideally be being drawn. Exactly how Magistrates interpret and apply the guidance with which they are provided is an under-explored question. Although there are examples of empirical work examining the sentencing guidelines in their application (Raine & Dunstan, 2009; Roberts, Hough, & Ashworth, 2011), a lack of access to the necessary data limits their number (Ashworth & Roberts, 2013). It was only as recently as 2010 that a statutory requirement was placed on the newly formed Sentencing

Council to monitor the use of its guidelines. Prior to this, the two statutory bodies which preceded it had neither the mandate nor the resources. The Sentencing Council discharged this monitoring duty by means of a survey of Judges' sentencing decisions in Crown Court cases. To date, no equivalent study has been attempted in Magistrates' Court. As a result, we know comparatively little of how the guidelines influence the synthesis of sentencing decisions for the kind of low-level crimes which make up the vast majority of cases.

This gap in our understanding is a reason for hesitancy in recommending the inclusion of addiction into the sentencing guidelines, but the format of the studies presented here, appropriately modified, may provide some answers. Rather than varying the offender characteristics, we could develop conditions in which respondents received different versions of draft guidelines on addiction. This would allow us to examine both how addiction would be interpreted in the absence of direction regarding its aggravating or mitigating nature, and whether guidance as to its mitigating or aggravating nature would in fact direct sentencing decisions.

Lastly, whilst the studies related here offer a window onto sentencing, there is much that remains obscured about this vital process. Whether we seek to correct behaviour, protect society, deter others from a similar path, or simply desire revenge for harms done, these are matters which are addressed at sentencing. Yet, there are impediments to discovering how these influences resolve in practice, amongst the greatest being that, in the majority of cases, the reasoning behind sentencing decisions goes unrecorded. Studying sentencing requires either, as in the studies presented here, deriving artificial models of sentencing practice, or gathering information from genuine cases. There is no requirement placed on Magistrates to record their reasoning in deciding one sentence over another. As a result, very few sentencing judgments are recorded in any significant detail, and understanding all of the factors which went into them would require being present in person on the day to note the details. Short of this, what nuance Magistrates expressed in their sentencing practice would be known only to them.

Yet we are rapidly approaching a point in time at which this need not necessarily be the case. At present, there is an active move towards digitizing many aspects of the criminal justice system. Much of what would previously have been printed evidence is now shared electronically, and it is not uncommon to see Magistrates consulting the sentencing guidelines on their tablets. All new recruits to the Magistracy are now

required to be proficient in information technology. As these changes come into effect, a fascinating opportunity presents itself. With relatively little effort, it would be possible to implement an interactive version of the sentencing guidelines. They already prompt a sequence of steps, beginning with an initial determination of the sentencing threshold which has been crossed, before accounting for indicators of greater or lesser seriousness. There is even a non-exhaustive list of potential factors which might serve to aggravate or mitigate offending. Magistrates are directed to follow this process, summing these factors as they go. It would be relatively straightforward to develop a digital version of the guidelines which recorded these steps. This would be a useful method for Magistrates to keep track of multiple factors at once in their deliberations, but would also provide insight into how the guidelines are used in practice.

Magistrates could select what they considered to be the relevant factors as they progressed, or enter others which were not suggested, before recording these along with their final sentencing decision. This would mean that a record would be kept not just of the sentence an offender received, but *why* they received it. The effect of this would be to reveal a great deal of what is presently obscured in sentencing decisions and permit light-touch monitoring of guideline efficacy. In turn, this would provide an invaluable resource for evolving sentencing policy approaches. Perhaps most importantly, it would be relatively straightforward to implement and would almost certainly drive long-term efficiency savings more than sufficient to offset the cost of its adoption.

The studies presented here have provided new insights into Magistrates' perceptions surrounding addiction, intoxication and prior fault by analyzing and interpreting approximately 1000 sentencing decisions. Across England and Wales, somewhere in the region of 1.6 million such decisions are made each year (National Audit Office, 2016). To capture a sense of the reasoning behind even a small fraction of these would have profound implications both for our understanding of criminal justice and for our approach to its practical application.

Conclusion

Addiction is seen as a disease by the majority of Magistrates, yet this does not appear to operate as a driving factor behind sentencing decisions. There is evidence of a much more complicated picture here, in which addiction makes salient certain ancillary characteristics of crimes and obscures others from consideration. Much of what we have seen suggests that this is not a consciously-adopted process, as it frequently contradicts stated aims and beliefs. The neurobehavioural hallmarks of addiction are taken to mitigate offending, even when explicitly stemming from drug-use, yet addiction itself is associated with harsher punishment. This apparent contradiction can be attributed in part to the type of intuitive decision-making processes which proliferate in the absence of clear guidance, informed by implicit moral biases operating largely outside conscious awareness.

Given the high number of cases involving addicted offenders, there is a clear and pressing need to address addiction in the sentencing guidelines. That it should be included as a mitigating factor derives not only from our current neuroscientific insight into addiction's impact on the brain and the resulting behavioural impairment, but also from Magistrates' demonstrated propensity towards leniency in respect of those same factors when salient in other guises. Even where they are attributed to habitual drug-use, and even when there is no clear excuse for beginning that use, the neurocognitive sequelae of addiction serve to mitigate responsibility for offending. It is only when named as addiction that they do not.

Appendix A

Principles

Addressing matters to be taken into account in sentencing, Section 142 (1) of the Criminal Justice Act 2003 lays out that:

Any court dealing with an offender in respect of his offence must have regard to the following purposes of sentencing —

- (a) the punishment of offenders,
- (b) the reduction of crime (including its reduction by deterrence),
- (c) the reform and rehabilitation of offenders,
- (d) the protection of the public, and
- (e) the making of reparation by offenders to persons affected by their offences.

There is no suggestion that any one principle is to be held above the others, nor that each should be given equal weight. As such, Magistrates are equipped with some latitude in determining the correct balance of these principles as they should be applied in sentencing a given defendant.

In order to gain a sense of the relative importance Magistrates place on the five principles in their general sentencing practice, we asked one cohort of participants ($N=290$) to complete a set of pre-experimental ratings. Respondents were shown the five principles, presented sequentially in random order, and asked to rate the importance of each in relation to their general sentencing practice dealing with adult offenders.

Table A1 - Importance ratings and corresponding percentage values.

Label	%
Not at all	0
Not very	20
Somewhat	40
Quite	60
Very	80
Extremely	100

Mean ratings are represented in Figure A1 and response patterns are represented in Figure A2.

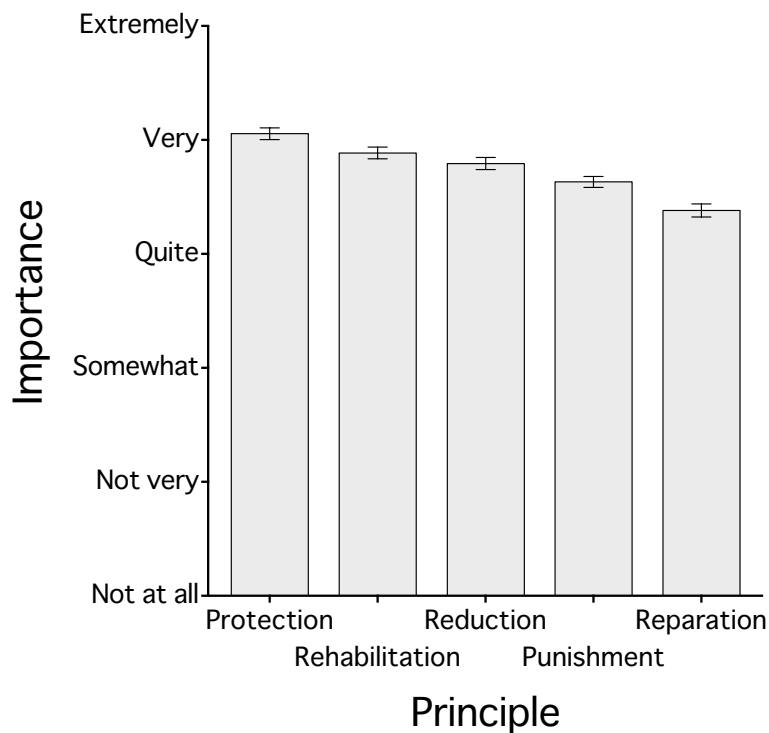


Figure A1 - Mean rating of importance of five principles of justice (error bars +/- 1 SEM).

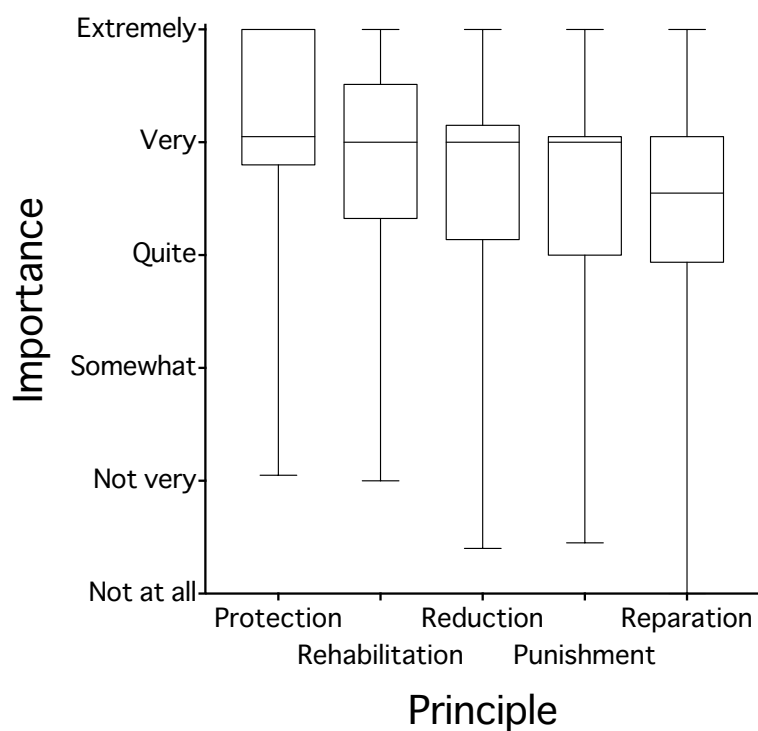


Figure A2 - Response distribution of rating of importance of five principles of justice.

By comparing individual respondents' ratings of the five principles we determined

the ranked order of importance for each respondent, giving us an idea of how each respondent balances the five principles in relation to one another in their general sentencing practice. This has the benefit of controlling for variation in linguistic expression of value (i.e. one respondent's definition of 'very important' may be equivalent to another respondent's definition of 'extremely important'), but also allowed the calculation of weighted rank scores. For each response set, the rank position of each principle was given a score (1st position=5, 2nd position=4, 3rd position=3, etc.). Where two or more principles were indicated as being of equal importance, the rank scores for those positions were summed and divided equally between them (e.g. where two principles were ranked in equal first place, the 5 and 4 points available for 1st and 2nd place were summed and divided equally, giving each 4.5 points). The higher the value, the higher the relative importance the principle has in relation to the other principles. The sum of these rank scores (α), divided by the total number of participants (n), gave a standardized relative importance score across groups (ω):

$$\omega = \sum \frac{\alpha}{n}$$

This step permitted the scores calculated here to be directly compared to those calculated from ranking data across individual chapters by accounting for variation in group size.

In general sentencing practice, the principle most likely to be placed first in order of importance, ahead of the other four principles, was Protection of the Public. Almost half of all respondents (49%; $n=141$) considered Protection of the Public to be of greatest importance when making sentencing decisions⁹. The principle second most frequently placed in a position of prominence was Rehabilitation, with 38% of respondents citing it as the most important principle (see Table A2).

⁹ Please note that stating of principles as equally important resulted in joint placement. For example, indicating that Protection and Punishment were both 'Extremely' important would assign a score of 100% to each and both principles would be ranked as occupying joint 1st place. For this reason, the sum total of ratings expressed as percentages may be higher than 100%.

Table A2 - Frequency and relative ranking of importance in sentencing decisions of the five principles of justice (modal rank for each principle in bold).

Principle	Rank									
	1st	%	2nd	%	3rd	%	4th	%	5th	%
Protection	141	(49)	63	(22)	43	(15)	25	(9)	18	(6)
Rehabilitation	111	(38)	47	(16)	57	(20)	45	(16)	30	(10)
Reduction	84	(29)	66	(23)	55	(19)	50	(17)	35	(12)
Punishment	55	(19)	43	(15)	78	(27)	70	(24)	44	(15)
Reparation	54	(19)	47	(16)	44	(15)	58	(20)	87	(30)

At the other end of the scale, both Punishment and Reparation were judged the most important principle in the least number of instances. The majority of respondents ranked Punishment third or below, whilst Reparation was most commonly judged to be the least important principle. This picture is reflected in the standardized scores (see Table A3).

Table A3 - Standardized scores of relative importance of the five principles of justice.

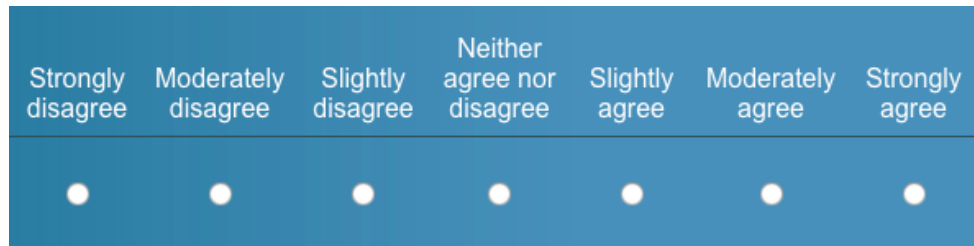
Rank	Principle	Score
1	Protection	3.6
2	Rehabilitation	3.2
3	Reduction	3.0
4	Punishment	2.6
5	Reparation	2.5

In placing Protection of the Public ahead of all other principles, Magistrates reflect the attitude of the public themselves. When asked about the importance of the five principles, 96% of the general public consider Protection to be of high importance (Hough, Roberts, Jacobson, Moon, & Steel, 2009, p. 13). However, 85% of the public consider that Punishment is of equivalent importance, whereas our sample of Magistrates indicated that they considered it among the least important principles in their general sentencing practice, of lower relevance than either Rehabilitation or the Reduction of offending.

Appendix B

Opinions

One cohort of participants ($N=274$) was additionally presented with a series of attitude questions designed to probe the personal opinions of Magistrates on aspects of drug-use and criminality. Each participant was presented with nine statements, randomly ordered, and asked to express the measure of their agreement or disagreement with each statement on a 7-point Likert scale:



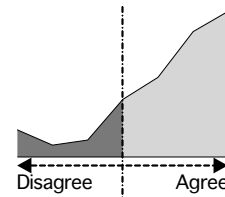
These responses were scored with agreement as positive values (e.g. slightly agree=+1, moderately agree=+2, etc.), disagreement as negative values (e.g. slightly disagree=-1, moderately disagree=-2, etc.) and neutral answers scored as zero.

The nine opinion statements which were presented are shown in Table B1 and response patterns are presented in Figure B1 on page 172.

Table B1 - Opinion statements.

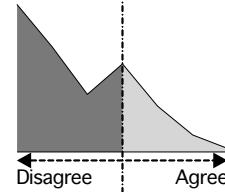
Code	Statement
A	Addiction is a disease
B	Drug addiction is evidence of a lack of moral character
C	All addicts must at one time have chosen to start taking drugs
D	All addictive drugs should be illegal
E	A drug addict is more likely than not to be a criminal
F	All harmful drugs should be illegal
G	A criminal is more likely than not to be a drug addict
H	People punished for taking drugs are less likely to take them in the future
I	Most people are offered illegal drugs at some point

A Addiction is a disease



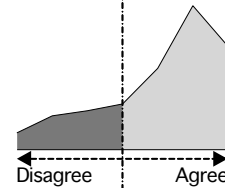
M=1.4
Mdn=2

B Drug addiction is evidence of a lack of moral character



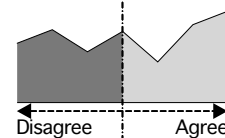
M=-1.3
Mdn=-2

C All addicts must at one time have chosen to start taking drugs



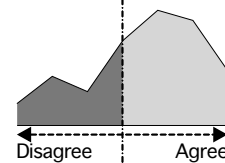
M=1.1
Mdn=2

D All addictive drugs should be illegal



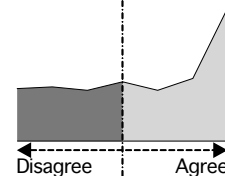
M=0.2
Mdn=0

E A drug addict is more likely than not to be a criminal



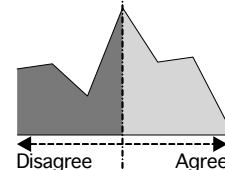
M=0.6
Mdn=1

F All harmful drugs should be illegal



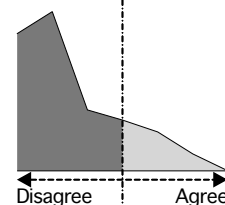
M=0.6
Mdn=1

G A criminal is more likely than not to be a drug addict



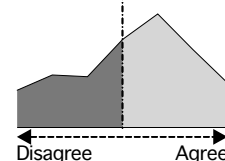
M=-0.3
Mdn=0

H People punished for taking drugs are less likely to take them in future



M=-1.6
Mdn=-2

I Most people are offered illegal drugs at some point



M=0.3
Mdn=1

Figure B1 - Statement evaluation.

Overall, Magistrates expressed strongest agreement with statement A ('Addiction is a disease') and statement C ('All addicts must at one time have chosen to start taking drugs'). The strongest disagreement in evidence was with statement B ('Drug addiction is evidence of a lack of moral character') and statement H ('People punished for taking drugs are less likely to take them in future').

Disease and Moral character. A sizeable majority of Magistrates (76%) expressed agreement with statement A ('Addiction is a disease'). Of those, 73% ($n=151$) expressed disagreement with statement B ('Drug addiction is evidence of a lack of moral character'), whilst 11% ($n=23$) agree (see Table B2)

Table B2 - Comparison of agreement with statements A and B.

		Addiction is a disease	
		Agree	Disagree
Drug addiction is evidence of a lack of moral character	Agree	23	12
	Disagree	151	13

It appears as if disagreement with the disease model of addiction does not go hand in hand with an assumption that addiction is thereby a moral failure. Certainly, those who agreed with the statement 'addiction is a disease' were significantly more likely to disagree with the statement 'drug addiction is evidence of a lack of moral character' [OR=4.1, $X^2=14.8$, 95%CI=1.93-8.89, $p<.001$], but the presumptive corollary does not appear to be true. That is, whilst 12% ($n=33$) of respondents disagreed with the statement 'addiction is a disease', this did not in itself equate with a tendency towards viewing addiction in moral terms. Of those 33 respondents, 13 (39%) additionally disagreed with addiction being evidence of moral failing, whilst 8 (24%) remained neutral on the issue.

Ultimately, then, only 4% ($n=12$) of all respondents in the sample ($N=274$) both disagreed with the conceptualization of addiction as a disease and at the same time agreed with the suggestion that it was evidence of moral failure. Almost twice as many respondents (8%; $n=23$) disagreed with both statements.

There is the suggestion here, then, that the notion of moral outrage expressed

towards addiction as a failure of will or conscience does not necessarily sit in opposition to its conception as a disease. Rather, there would appear to be scope for strong opinion in one regard in the absence of any strong opinion in the other, and moreover the potential for them to overlap.

Indeed, those that expressed neutrality in respect of addiction's disease status ($n=34$) were significantly more likely to disagree with its being evidence of moral failing than they were to agree [$X^2=9.78$, $p=.003$], and whilst the majority of respondents (76%; $n=207$) agreed with the characterization of addiction as a disease, more than one in ten of those who did so (11%; $n=23$) also expressed agreement with addiction being evidence of moral failing. Only a very small proportion of respondents (4%) were neutral in respect of both statements.

Whilst a Pearson product-moment correlation coefficient indicated a significant negative correlation between agreement with the disease model and the moral failing perspective [$N=274$, $r=-0.29$, $p<.001$], the weakness of this correlation in combination with the preceding findings suggests that any presumptive dichotomy of moral failing versus brain disease is unlikely to bear up under scrutiny.

People punished (H). The most pronounced opinion was that offered to the statement 'people punished for taking drugs are less likely to take them in future'. Fully 77% of respondents disagreed with this statement and nearly half did so in the strongest possible terms. In contrast, only 12% of respondents agreed with the statement, not one of whom did so in strong terms. Although debate continues over the value of deterrence as a factor in sentencing practice, it would appear that its utility in respect of drug-fuelled crime is a calculation which a preponderance of Magistrates have already made.

The proportion of respondents disagreeing with the efficacy of punishment in reducing future drug use did not exhibit significant variation in line with acceptance or rejection of the disease model of addiction [$OR=1.4$, $X^2=0.3$, 95%CI=0.4-5.0, $p=.59$] (see Table B3).

Table B3 - Comparison of agreement with statements A and H.

		Addiction is a disease	
		Agree	Disagree
People punished for taking drugs are less likely to take them in future	Agree	27	3
	Disagree	159	25

Choice (C). The majority of Magistrates (71%) agree with the statement ‘All addicts must at one time have chosen to start taking drugs’, contrasted against only 19% who disagree.

Separation along the lines of agreement with the disease model of addiction demonstrates that 69% of respondents express agreement with both statements (see Table B4). Which is to say that over two-thirds of Magistrates conceive of addiction as, in one sense at least, a disease of choice.

Table B4 - Comparison of agreement with statements A and C.

		Addiction is a disease	
		Agree	Disagree
All addicts must at one time have chosen to start taking drugs	Agree	149	19
	Disagree	42	7

However, acceptance or rejection of the disease model of addiction did not appear to be related to whether initial drug use was understood to be a choice [OR=1.3, $X^2=0.32$, 95%CI=0.5-3.3, $p=.57$].

Overall. There is broad agreement amongst Magistrates that addiction is a disease. In the wider sense, then, this model is demonstrably influencing understanding amongst Magistrates. The proportion of Magistrates agreeing with the statement ‘addiction is a disease’ was 76%.

However, what is revealed in these results is the clear absence of a simple dichotomy in the understanding of addiction. Amongst those who agreed in the strongest possible terms that addiction is a disease ($n=86$), 75% also agree with the notion of choice being a relevant component in first drug-use, whilst 11% additionally characterize addiction as

evidence of moral failure.

There is an evolving presumption in much of the recent literature touching on the issue of addiction that the disease model sits in antithesis to the conception of drug dependency as a voluntarily self-induced condition indicative of weak or absent morality (Heyman, 2009, 2013; Lewis, 2015). These findings on the opinions held by acting Magistrates provide strong evidence against the existence of such a relationship, suggesting at the very least a multi-dimensionality to these opinions sufficient to accommodate factors which, superficially, appear to be mutually countervailing.

Appendix C

Odds ratios

The relative odds of receiving an altered sentence in one condition over that of receiving an altered sentence in a second condition can be calculated using the formula:

$$OR = \frac{a/c}{b/d}$$

where, (a) and (b) are the number of sentence changers and non-changers, respectively, in condition 1 and (c) and (d) the number of sentence changers and non-changers, respectively, in condition 2.

Resulting Odds Ratios that are either greater than or less than 1 are indicative of an association between the information provided at a particular stage and the likelihood of sentence change (an Odds Ratio of 1 is indicative of no association).

To determine the statistical significance of calculated Odds Ratios, we additionally determined 95% confidence intervals using the formula:

$$e \wedge \ln(OR) \pm 1.96 \times \sqrt{\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d}\right)}$$

Odds ratios were pooled and weighted averages obtained using the Cochran-Mantel-Haenszel method:

$$\widehat{OR}_{MH} = \frac{\sum_{i=1}^k \left(\frac{a_i d_i}{n_i}\right)}{\sum_{i=1}^k \left(\frac{b_i c_i}{n_i}\right)}$$

where a_i , b_i , c_i and d_i are the number of participants in a two-by-two table in the i^{th} iteration of a stratified analysis and n_i is the total number of participants in that iteration.

Appendix D

Equiprobability rank calculations

Two variants of equiprobability coding were employed to allow the ranked importance of the five principles of justice to be compared across conditions, between studies, and with the ranking of principles in general sentencing practice (see Appendix A). Rank scores were calculated as the reverse of ranked importance (e. g. 1st place=5 points, 2nd place=4 points, 3rd place=3 points, etc.).

As outlined in Appendix A (see page 167), when rating the importance of the individual principles in general sentencing practice, it was possible for our participants to submit two or more principles as being of equal importance. In this event, rank scores were averaged. For instance, where two principles were ranked in equal first place, the 5 points for 1st place and the 4 points for 2nd place would be summed and shared across the two principles, giving each 4.5 points. The next highest ranked principle would then be assigned 3rd place, receiving an associated 3 points. In this way, the total rank scores for any one response set totalled 15.

In chapters 3, 4 and 5, participants were asked to specify which of the five principles were at the forefront of their consideration in reaching their sentencing decision. In the event that they selected more than one principle (as they most frequently did), they were asked to rank them. Where three or fewer principles were selected, those omitted shared the points available for the remaining positions. For example, if three principles were selected and ranked in 1st, 2nd and 3rd position, those principles which had not been selected would occupy the 4th and 5th ranks, sharing the 2 and 1 points available for those positions and receiving 1.5 points each.

Appendix E

Ethics and sampling

All studies presented in this thesis were conducted in accordance with the British Psychological Society's Code of Ethics and Conduct. Informed consent was collected in advance and all respondents were debriefed and given the opportunity to withdraw their responses following participation. The study protocols were approved by the Research Ethics Committee of the University of Sussex. Ethical approval for the study presented in Chapter 2 was extended by the University of Sussex School of Psychology Research Ethics Officer under project code 11109. Data collection for this study took place between January and March 2012. The online survey was hosted on the Qualtrics platform (Provo, Utah). Cards inviting participants to take part in the study were distributed at London's Westminster, Hammersmith and Richmond Courts, and a link to the study was also hosted in the secure Members Area of the Magistrates' Association (MA) website. The studies presented in Chapters 3, 4 and 5 were approved by the Sciences and Technologies Cross-Schools Research Ethics Committee of the University of Sussex under project codes ER/NS249/1 and ER/NS249/2. Sampling took place between May and September 2016. The studies were hosted on the same Qualtrics platform. Links to the studies were distributed via e-mail in the MA's monthly member bulletin and, in common with the first study conducted, also accessible via the Members Area of the MA website.

The demographic information collected from our participants was limited to their sex and age, but we can offer that in these two respects our samples closely reflected the population of Magistrates as a whole. Our participants included both sexes in approximately equal proportions and were, in the majority, between 60 and 70 years of age.

Appendix F

Bayes Factor calculations

All Bayes Factor calculations performed in the studies presented were conducted using the Dienes Bayes calculator (Dienes, 2012). Where possible, prior probability distributions were derived from observed effects in previous experiments. In the absence of previous empirical research, priors were derived through examination of findings in related areas. Full details of the probability distributions employed for each chapter are outlined in the associated appendix. Bayes factor interpretation and presentation adopt the approach outlined in Dienes (2015; 2016). Bayes Factors are presented in the format $B_{x(y, z)}$, where x is the distribution employed, y is the modal value of the distribution and z is the standard deviation. For instance, $B_{H(0, 5)}$ describes a half-normal distribution with a mode of 0 and standard deviation of 5 (see Figure F1).

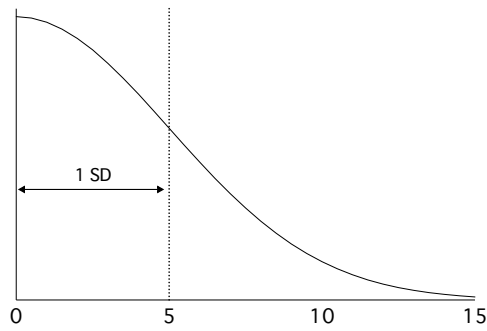


Figure F1 - Example prior probability distribution for Bayes Factor calculation.

Table F1 is provided as a guide to Bayes Factor interpretation. For a more detailed account of Bayes Factor calculation and interpretation, see Dienes (2014). Where appropriate, Bayes Factors are presented in standard form.

Table F1 - Classification Scheme for the Bayes Factor (as proposed by Jeffreys (1961) and adapted by Wagenmakers et al. (2011)).

Bayes factor, BF_{01}	Interpretation
> 100	Extreme evidence for H_1
$30 - 100$	Very strong evidence for H_1
$10 - 30$	Strong evidence for H_1
$3 - 10$	Substantial evidence for H_1
$1 - 3$	Anecdotal evidence for H_1
1	No evidence
$\frac{1}{3} - 1$	Anecdotal evidence for H_0
$\frac{1}{10} - \frac{1}{3}$	Substantial evidence for H_0
$\frac{1}{30} - \frac{1}{10}$	Strong evidence for H_0
$\frac{1}{100} - \frac{1}{30}$	Very strong evidence for H_0
$< \frac{1}{100}$	Extreme evidence for H_0

Appendix G

Bayes calculations for Chapter 2

For Bayes Factor calculations at Stages 3 and 4, the sample mean was taken as the natural log of the calculated odds ratio, whilst the predicted population value and associated standard deviation were derived from the observed effect at Stage 2. The prior probability distribution was modelled as a half-normal ($p=0$) with a standard deviation of 1.16, the natural log of the calculated odds ratio at Stage 2 (see Figure G1). Bayes Factor calculations for estimates of pooled odds ratios derived standard error assuming a fixed-effects model.

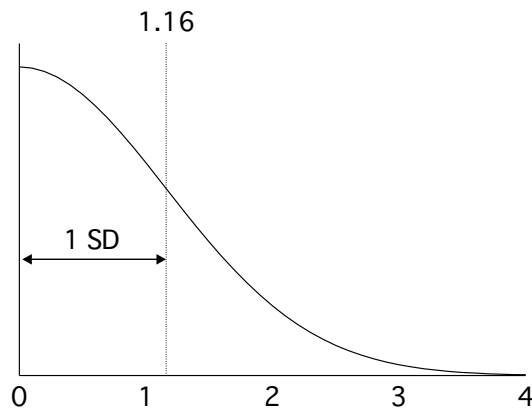


Figure G1 - Prior probability distribution employed for Bayes Factor calculations at Stages 3 and 4.

Appendix H

Bayes calculations for Chapter 3

Percentage change.

The study presented in Chapter 2 gave a difference of 10.28% in mean sentence reduction between the Heroin and Woznicki's conditions (see page 49). Bayes factor calculations for the difference in mean percentage sentence reduction between the Heroin and Woznicki's Aetiology conditions in Chapter 3 were based on this value. The prior probability distribution was defined as a normal with a mean of 10.28 and a standard deviation of 5.14 (see Figure H1).

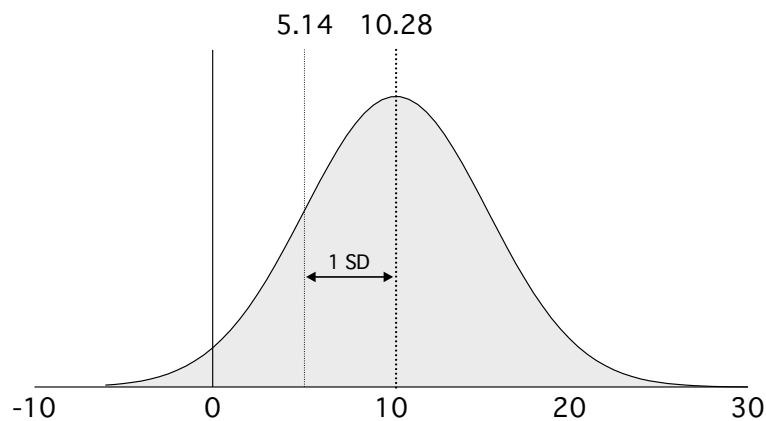


Figure H1 - Prior probability distribution of difference in mean percentage reduction between Heroin and Woznicki's Aetiologies.

Both the Heroin-Woznicki's and the Woznicki's-Heroin conditions replaced one of the two components distinguishing the Heroin condition from the Woznicki's condition. Anticipating that any effect of such replacement would fall mid-way between the observed results in the Heroin and Woznicki's conditions, the prior probability for subsequent comparisons was determined as a normal distribution with a mean of 11.6 (half the observed difference between the Heroin and Woznicki's conditions), with an associated standard deviation of 5.8 (see Figure H2).

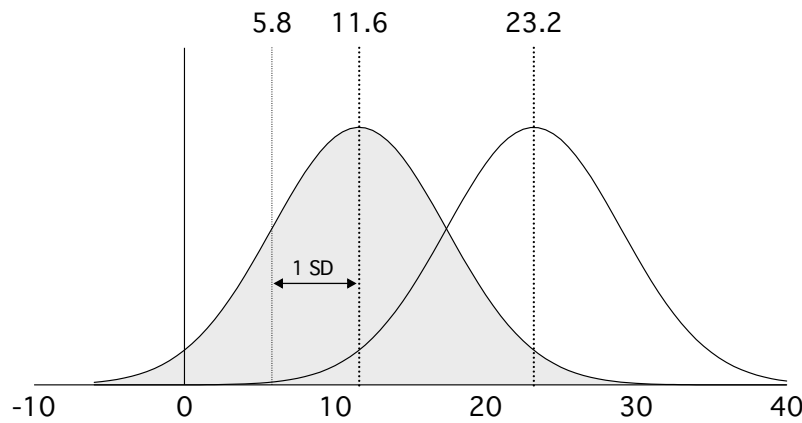


Figure H2 - Prior probability distribution of difference in mean percentage reduction between Heroin/Woznicki's Aetiologies and mixed Aetiologies.

Odds.

Bayes Factor calculations with respect to odds of sentence change employed priors derived from the observed effect in Chapter 2. The prior probability distribution was modelled as a half-normal with a mode of 0 and a standard deviation of 1.16 (see Figure H3). Bayes Factor calculations for estimates of pooled odds ratios derived standard error assuming a fixed-effects model.

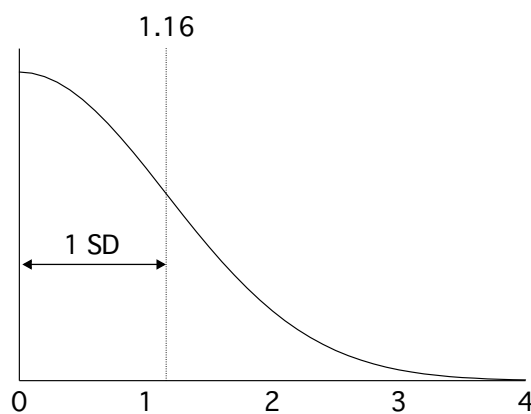


Figure H3 - Prior probability distribution employed for Bayes Factor calculations relating to odds of sentence alteration.

Appendix I

Bayes calculations for Chapter 4

Odds of sentence reduction

Bayes Factor calculations on the odds of sentence reduction employed a prior probability distribution derived from the observed odds of sentence reduction by virtue of autogenic or iatrogenic origin in Chapter 2 (see page 49). The distribution was modelled as a half-normal with a mode of 0 and a standard deviation of 2.49 (see Figure I1).

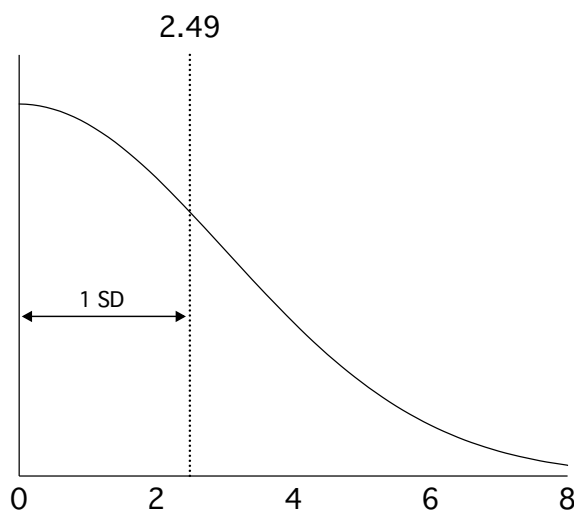


Figure I1 - Prior probability distribution employed for Bayes calculations of likelihood of sentence reduction..

Odds of sentence increase

With no previous findings on the impact of autogenic or iatrogenic origin of addiction on the likelihood of sentence increase, probative Bayes Factor calculations employed a prior probability distribution derived from our observation across preceding studies that a 2:1 odds ratio was a rule-of-thumb requirement for anything more than anecdotal evidence of an effect given sample sizes and response rates. The distribution was modelled on a logarithmic scale with a mode of 0 and a standard deviation of 0.35, such that two standard deviations from the mean fell at 0.7, the natural log of 2 (see Figure I2).

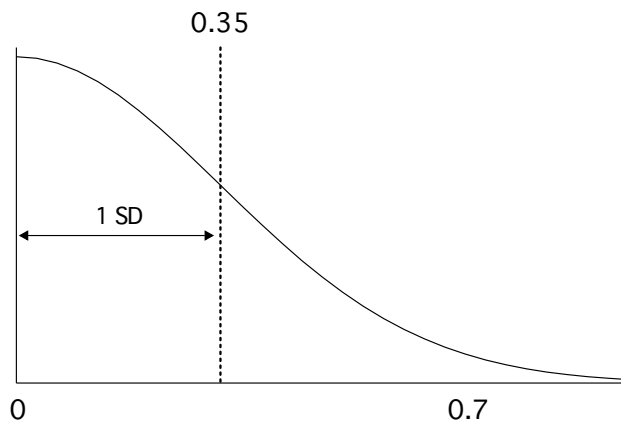


Figure I2 - Prior probability distribution employed for Bayes Factor calculations of likelihood of sentence increase.

Willingness to treat

The prior probability distribution employed in Bayes Factor calculations with regard to willingness to treat in the Quit, 2quit and Quitfail Maintenance conditions was derived from the observed effect in the Cont condition. It was modelled as a normal distribution with a mean of 2.7 and a standard deviation of 1.35 (see Figure I3). Bayes Factor calculations for estimates of pooled odds ratios derived standard error assuming a fixed-effects model.

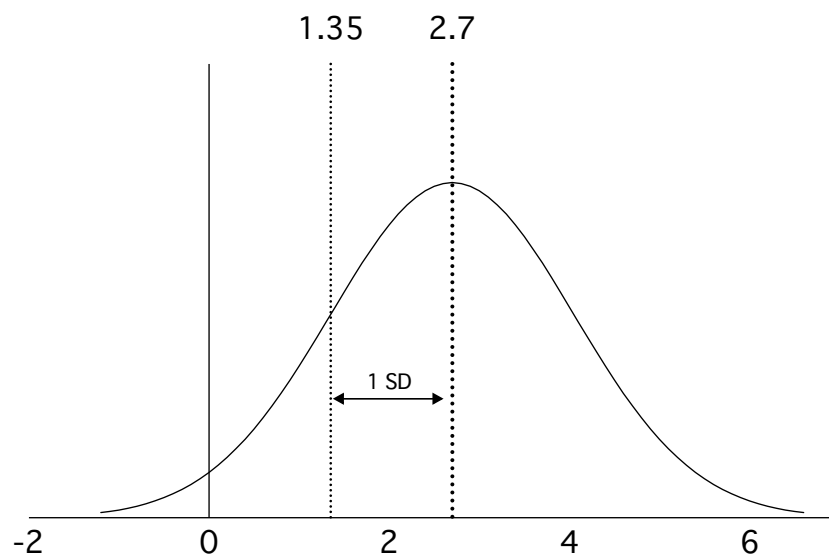


Figure I3 - Prior probability distribution employed for Bayes calculations of willingness to treat.

Appendix J
Bayes calculations for Chapter 5

Odds of sentence reduction

Bayes Factor calculations on the odds of sentence reduction employed a prior probability distribution modelled as a half-normal with a mode of 0 and a standard deviation of 1.1, the natural log of 3 (see Figure J1). This distribution was derived from similar observed effects in the preceding chapters, accounting for the sensitivity of the data given sample and effect sizes.

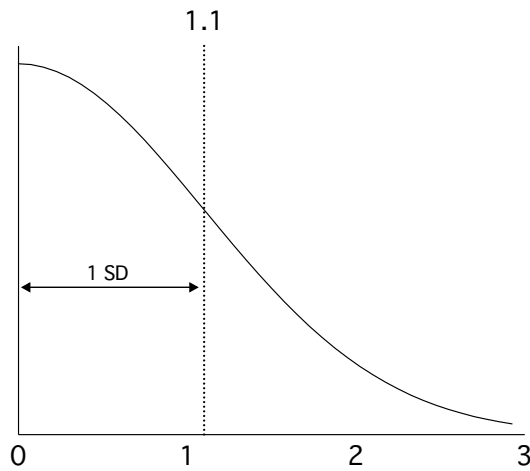


Figure J1 - Prior probability distribution employed for Bayes calculations of likelihood of sentence reduction.

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